



GOT TONSIL?

Classical Swine Fever Surveillance

The tonsil is the tissue of choice for CSF surveillance.
This brochure describes the proper technique for
sample collection and submission.

“Advances in diagnostic capabilities have made analysis of the tonsil an increasingly important tool in the diagnosis of a number of endemic swine diseases.”

CLASSICAL SWINE FEVER SURVEILLANCE PROGRAM

No diagnostic sample submission is complete without including the tonsil. Its location in the oropharynx exposes the tonsil to a variety of viral and bacterial pathogens, making analysis of the tonsil an increasingly important tool in the diagnosis of a number of endemic swine diseases. The USDA's Classical Swine Fever Surveillance Program (https://www.aphis.usda.gov/vs/nahss/swine/csf/CSF_procedure_manual_2007.pdf) identifies tonsil, tonsil scrapings and nasal swabs as appropriate samples for CSF detection if collected and submitted properly.

As an incentive for producers and veterinarians to submit tonsil, USDA will credit the submitter with \$50 to be applied to the diagnostic workup for those cases tested by a participating National Animal Health Laboratory Network (NAHLN) lab. A list of participating labs can be found on the NAHLN web site at https://www.aphis.usda.gov/animal_health/nahln/downloads/csf_lab_list.pdf. Please contact the lab prior to submitting samples to confirm they are able to accept them.

USDA has designated 18 states and Puerto Rico as “high risk” for CSF introduction: Florida, Arizona, Georgia, California, Illinois, Hawaii, Indiana, Iowa, Minnesota, Kansas, New Jersey, Nebraska, New York, New Mexico, North Carolina, Oklahoma, Texas, and Washington. Surveillance efforts will focus on these locations. With the exception of Iowa and Minnesota, all tonsil and nasal swab samples sent to a participating NAHLN laboratory in or from these states are eligible to be tested and receive the \$50 credit.

Due to the large number of swine cases submitted to the NAHLN diagnostic labs in Minnesota and Iowa, samples from these states will only be eligible for testing if at least one of the following conditions is observed:

- dramatic acute septicemias,
- abortions, congenital deformities,
- dermatitis or nephritis (PDNS),
- undiagnosed CNS cases, or
- other undefined cases the pathologist determines should be submitted.

Please Note: If you suspect CSF, immediately notify state or federal animal health officials. A Foreign Animal Disease Diagnostician will visit the farm and submit the appropriate tissues directly to the Foreign Animal Disease Diagnostic Laboratory.

TISSUE COLLECTION TECHNIQUES

The following sections will instruct you on the proper methods for sample collection including:

- ✓ Removing the tonsil
- ✓ Tonsil scraping
- ✓ Nasal swabbing

Submitting tonsil is the preferred tissue for CSF surveillance but cannot be performed on live pigs. In contrast, tonsil scraping and nasal swabbing can both be conducted on living animals. For all of these techniques, it is important that the samples be collected and submitted according to the guidelines that follow.

Key points to keep in mind are:

- insure that the tissue submitted is actually the tonsil and not soft palate,
- the tonsil must be submitted on ice, but not frozen,
- tonsil scrapings and nasal swabs must be submitted only in media approved by the National Veterinary Services Laboratory (NVSL) for CSF surveillance,
- all samples must be properly labeled, packaged in leak-proof containers, and accompanied by the appropriate submission forms, fully completed with a thorough history.

Remember, samples collected by any of the following techniques are eligible for a \$50 diagnostic laboratory credit if properly collected and submitted to a participating NAHLN lab.

Tools Needed For All Techniques:

- Fine point permanent marker
- Ball-point pen
- Pan or bucket for disinfecting instruments & rinsing gloved hands
- Bleach (disinfectant)
- Paper towels
- Trash bags

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REMOVING THE TONSIL



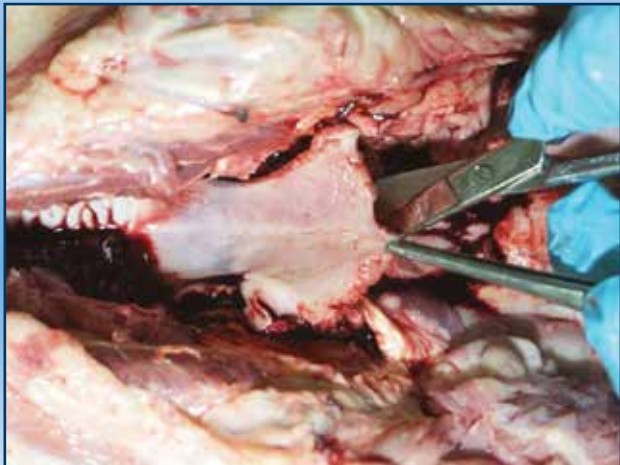
1. Place the pig in dorsal recumbency and, beginning near the chin, use a knife to reflect the skin caudally to expose underlying tissues in the intermandibular and proximal cervical regions.



2. Incise soft tissue along the medial aspect of each mandible. Extend proximally to the mandibular symphysis on each side in order to free the attachments of the tongue.



5. Use scissors to separate the tonsil from laryngeal structures caudal to it.

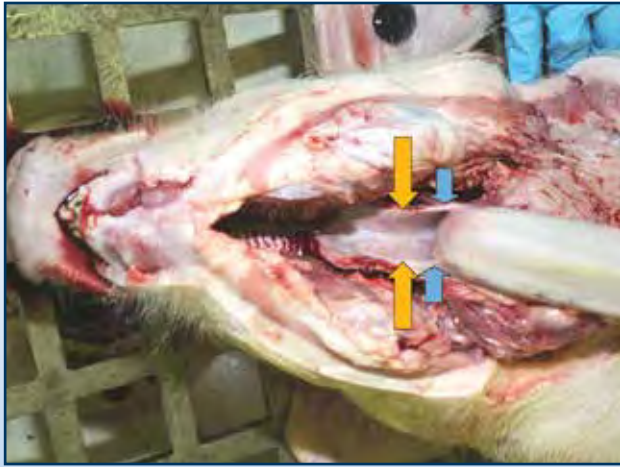


6. Grasp the caudal aspect of the tonsil with forceps and use scissors to cut the deep attachments of the tonsil.

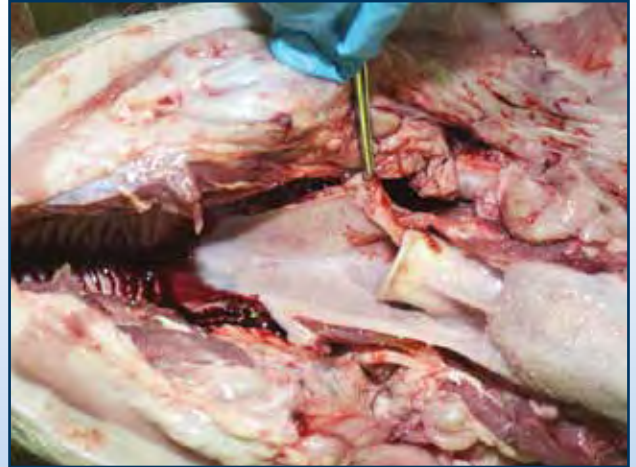
Tools Needed For Removing Tonsil:

- Knife and scissors
- Forceps
- Screw-top plastic sample tubes (no media necessary)

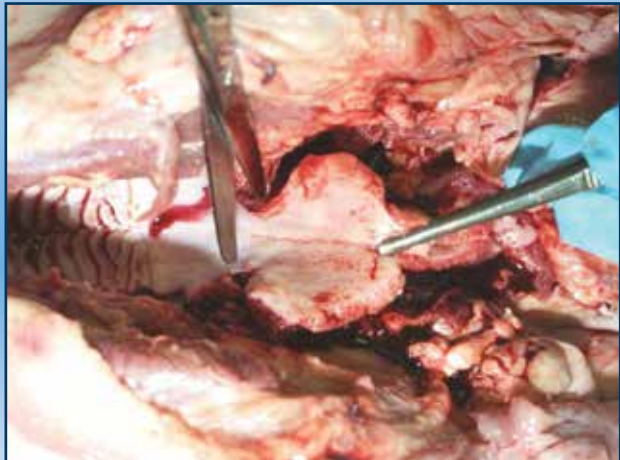
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3. Reflect the tongue caudally exposing the palate and tonsil. The tonsil (gold arrows) is located caudal to the soft palate. Cut the lateral attachments (blue arrows) to fully retract the tongue.



4. Reflect the tongue further to expose the tonsil and epiglottis. Note the dimpled appearance of the flattened tonsil, due to invaginations of the epithelium that form crypts.



7. Cut the proximal attachments of the tonsil to the soft palate. The tonsil can now be removed, placed in a sample tube and sent to the diagnostic laboratory on ice.



REMEMBER:

**DO NOT FIX OR FREEZE
THE TONSIL SAMPLE.**

TONSIL SCRAPING

1. The pig should be restrained. Anesthesia is not needed.
2. Prop the mouth open using a speculum and place the bowl of the sterile spoon past the hard palate down into the upper throat. A long-handled spoon facilitates collection in market age or larger swine with longer palate. The tonsil is just past the hard palate and is recognized by the pitted appearance of its surface.
3. Gently scrape the bowl of the spoon over the surface of the tonsil in a back-to-front motion several times. This will cause the tonsil to exude a mucosal excretion from the crypts.
4. On the third or fourth pass over the tonsil, the bowl of the spoon will collect a significant amount of sample, sometimes as much as 1-2 ml. Do not scrape too hard, as drawing blood is not desired.
5. Remove the spoon from the mouth, taking care to avoid dragging the spoonful of sample across the hard palate.
6. Remove the sample from the spoon using a Dacron swab and place in the sample tube containing medium approved by NVSL for CSF surveillance.

Tools Needed For Tonsil Scraping:

- Sterile long-handled spoon
- Speculum
- Dacron swab
- Sample tube containing medium approved by NVSL for CSF surveillance.

NASAL SWABBING

1. The pig should be restrained with the head positioned upward to allow easy access to the nasal cavity. Anesthesia is not needed.
2. Insert a sterile Dacron swab through the nostril into the nasal cavity and gently swab the surface of the nasal mucosa with a circular and back and forth motion to cover as much as possible of the mucosal surface. Avoid touching the skin as you enter the nostril.
3. The swab will collect nasal mucosal secretions and surface epithelium. It is important not to scrape too hard, as drawing blood is not desired.
4. Remove the Dacron swab from the nostril and repeat the procedure in the other nostril, using the same swab.
5. Place the Dacron swab in the sample tube containing medium approved by NVSL for CSF surveillance. Stir the nasal swab into the medium so that the sample is washed out from the swab into the medium.

Tools Needed For Nasal Swabbing:

- Dacron swab
- Sample tube containing medium approved by NVSL for CSF surveillance.

PROPER LABELING OF SAMPLES



- Label each tube with a smear/waterproof pen. Include on each label:
 - ✓ Sample number,
 - ✓ Type of specimen in tube (tonsil or scraping, nasal swab),
- Place the samples in a cooler and/or on cold packs. Do not freeze specimens.
- Properly dispose of the carcass and any non-submitted tissues.



American Association of Swine Veterinarians

830 26th Street, Perry, IA 50220, USA
Phone: 515-465-5255; Fax: 515-465-3832
E-mail: aasv@aasv.org



Any questions regarding sampling techniques can be directed to the swine staff at USDA APHIS VS - Surveillance, Preparedness, and Response Services:

JOHN KORSLUND, DVM
301-851-3468 or john.a.korslund@aphis.usda.gov

JOHN BARE, DVM
515-284-4122 or john.r.bare@aphis.usda.gov

CHRISTINA LOIACONO, DVM, PhD
515-337-7911 or christina.m.loiacono@aphis.usda.gov

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