

Abortion

A. History

- Provide information on herd/flock size, numbers of pregnant animals, number of abortions/stillbirths/weak neonates, and clinical signs, parity and stage of gestation, and vaccination status of the dam.

B. Selecting and submitting samples

- Submission of **placenta** as well as the **entire fetus(s)** improves the likelihood of obtaining an etiologic diagnosis.
- If submitting samples from in-clinic postmortem examination, request **specific tests**, and submit **separate tissue samples** in **INDIVIDUAL** labelled Whirl-Pak bags for each lab section and test requested.
- Mummified fetuses are usually not suitable for testing, except for porcine parvovirus and *Toxoplasma*.
- If multiple fetuses/placentas, please indicate if from separate dams and submit accordingly.

C. Samples required

Swine abortion

Note: Submission of weak, live neonates and maternal serum samples is more useful than submission of dead aborted or stillborn littermates (particularly for detection of PRRSV). If possible, submit several fetuses, as agent and/or lesions may not be present in all fetuses.

Lab	Tests	Specimen type / volume Collection protocol
Bacteriology	<ul style="list-style-type: none"> • Bacterial culture, abortion case (bcabo) 	<ul style="list-style-type: none"> • placenta, lung, stomach content (1-2mL)
Histology	<ul style="list-style-type: none"> • Histology food (hist) • Immunohistochemistry is available on formalin-fixed tissues for PRRSV, PCV-1,2,3, <i>Leptospira</i> 	Formalin fixed: <ul style="list-style-type: none"> • placenta Fetal tissues: <ul style="list-style-type: none"> • eyelid, skeletal muscle, thyroid gland, thymus, lung, heart, liver, kidney, adrenal gland, spleen, jejunum, spiral colon (with meconium), brain
Serology	<ul style="list-style-type: none"> • PRRSV ELISA (prrx3) 	<ul style="list-style-type: none"> • serum from aborting sows
	<ul style="list-style-type: none"> • PPV HI (xppvhi) 	<ul style="list-style-type: none"> • paired serum from aborting sows
	<ul style="list-style-type: none"> • <i>Leptospira</i> MAT (leptmatf) 	<ul style="list-style-type: none"> • fetal thoracic fluid • serum from 3-5 aborting/affected sows and an equal number of unaffected cohorts is useful for diagnosing <i>Leptospira</i>-associated abortions • paired serum not essential
Virology	<ul style="list-style-type: none"> • PRRSV PCR (prtqn) • PCV-1,2,3 PCR (pcv123) 	<ul style="list-style-type: none"> • fetal thoracic fluid, lung • serum from aborting sows
	<ul style="list-style-type: none"> • PPV PCR (ppvrt) 	<ul style="list-style-type: none"> • frozen lung (from mummified fetuses <16cm)

Bovine abortion

Lab	Tests	Specimen type / volume Collection protocol
Bacteriology	<ul style="list-style-type: none"> Bacterial culture, abortion case (bcabo) 	<ul style="list-style-type: none"> placenta, lung, abomasal fluid (1-2 mL)
Histology	<ul style="list-style-type: none"> Histology food (hist) Immunohistochemistry is available on formalin-fixed tissues for BVDV, BoHV-1 (IBRV), <i>Leptospira</i> 	Formalin fixed: <ul style="list-style-type: none"> placenta with cotyledon Fetal tissues: <ul style="list-style-type: none"> eyelid, skeletal muscle, thyroid gland, thymus, lung, heart, liver, kidney, adrenal gland, spleen, jejunum, spiral colon (with meconium), brain
Molecular Biology	<ul style="list-style-type: none"> <i>Ureaplasma</i> PCR (UreaPCR) +/- <i>Ureaplasma</i> culture (mcultf) 	<ul style="list-style-type: none"> placenta, lung, abomasal fluid
Serology	<ul style="list-style-type: none"> BVDV, IBRV, <i>Leptospira</i> PCR (bvdr, ibrr, leptpcr) 	<ul style="list-style-type: none"> paired serum from dam
	<ul style="list-style-type: none"> <i>Neospora</i> (neo) 	<ul style="list-style-type: none"> acute serum from dam
	<ul style="list-style-type: none"> <i>Leptospira</i> MAT (leptmatf) 	<ul style="list-style-type: none"> fetal thoracic fluid
Virology	<ul style="list-style-type: none"> Bovine abortion panel PCR (boabopc) <ul style="list-style-type: none"> BoHV-1/IBRV <i>Leptospira</i> <i>Neospora caninum</i> Bovine viral diarrhea virus / Bovine adenovirus / Bovine coronavirus PCR (bvdadco) 	<ul style="list-style-type: none"> placenta, kidney, liver, spleen (pooled) fetal thoracic fluid also suitable for BVDV PCR

Sheep/goat abortion

Lab	Tests	Specimen type / volume Collection protocol
Bacteriology	<ul style="list-style-type: none"> Bacterial culture, abortion case (bcabo) 	<ul style="list-style-type: none"> placenta, lung, abomasal fluid (1-2mL)
Histology	<ul style="list-style-type: none"> Histology, food animal (hist) Immunohistochemistry is available on formalin-fixed tissues for <i>Toxoplasma</i> and BVDV/BDV 	Formalin fixed: <ul style="list-style-type: none"> placenta with cotyledon Fetal tissues: <ul style="list-style-type: none"> eyelid, skeletal muscle, thyroid gland, thymus, lung, heart, liver, kidney, adrenal gland, spleen, jejunum, spiral colon (with meconium), brain
Molecular Biology	<ul style="list-style-type: none"> <i>Chlamydia abortus</i> PCR and <i>Coxiella burnetii</i> PCR (cacbpcr) <i>Toxoplasma gondii</i> PCR (toxopc) 	<ul style="list-style-type: none"> placenta

Lab	Tests	Specimen type / volume Collection protocol
Serology	• Cache Valley virus VN (xcache)	• fetal thoracic fluid
	• <i>Toxoplasma</i> (send out)	• serum from dam

Equine abortion

Lab	Tests	Specimen type / volume Collection protocol
Bacteriology	• Bacterial culture, abortion case (bcabo)	• lung, stomach content, placenta
Histology	<ul style="list-style-type: none"> • Histopathology, equine abortion (histcm1) • IHC, Equid herpesvirus 1 (ehvi) • IHC, <i>Leptospira</i> spp. (lepti) 	Formalin fixed: <ul style="list-style-type: none"> • placenta and cervical star Fetal tissues: <ul style="list-style-type: none"> • eyelid, skeletal muscle, thyroid gland, thymus, lung, heart, liver, kidney, adrenal gland, spleen, jejunum, colon with meconium, brain
Molecular Biology	• Potomac horse fever PCR (phfpc)	• liver, lung, placenta, spleen
Serology	<ul style="list-style-type: none"> • Equine arteritis virus VN (xeavvn) • Serology is not diagnostic for equine herpesvirus abortion 	• serum
Virology	<ul style="list-style-type: none"> • Equid herpesvirus 1 PCR (ehv12) • Equine arteritis virus PCR (eavrt) 	<ul style="list-style-type: none"> • fetal thoracic fluid or lung • liver, spleen, kidney, placenta