

# OVINE DIAGNOSTIC PLANS/PANELS



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The following diagnostic plans have been developed primarily as an **educational** tool to assist the veterinarian in designing a complete, although not exhaustive, diagnostic strategy. To encourage veterinarians to select only the tests that are deemed clinically appropriate in each situation, the price of the diagnostic plan is not discounted from the sum of the individual test costs. **Superscript numbers match the individual tests to the sample needed.** For the test groupings labeled as panels, there may be a discounted price versus the costs of the individual tests. Diagnostic plans and panels can be requested by writing the complete name as the test request. If appropriate samples are included all tests will be performed.

DIAGNOSTIC PLAN/PANEL	TESTS PERFORMED	PRICES	SAMPLES NEEDED
<b><u>Coagulation Panel, Large Animal</u></b>	<a href="#">aPTT</a> ; <a href="#">PT</a> ; <a href="#">Fibrinogen (Claus method)</a>	\$42.50	2 ml <b>separated citrate plasma</b> in plastic or siliconized glass tube (blue top and then separated and transferred). <b>SHIP CHILLED.</b>
<b>Dermatology Diagnostic Plans</b>	<p><b>Deep lesion</b></p> <p><a href="#">Aerobic bacterial culture</a><sup>1</sup> (1 sensitivity included); <a href="#">Biopsy for parasite exam</a><sup>2</sup>; <a href="#">Fungal culture</a><sup>3</sup>; <a href="#">Gram stain</a><sup>4</sup>; <a href="#">Histopathology (biopsy)</a><sup>5</sup></p> <p><b>Superficial lesion</b></p> <p><a href="#">Fungal culture</a><sup>3</sup>; <a href="#">Gram stain</a><sup>4</sup>; <a href="#">Histopathology (biopsy)</a><sup>5</sup>; <a href="#">Skin scraping for ectoparasite identification</a><sup>6</sup>; <a href="#">Cytology</a><sup>7</sup></p> <p>All skin biopsy submissions should be accompanied by a <a href="#">Dermatohistopathology Submission Form</a>. For additional guidance refer to <a href="#">Dermatopathology Sampling Guide</a>.</p>	<p>Deep lesion: \$233.</p> <p>Testing may qualify for <a href="#">N.Y State contract</a> case subsidy.</p> <p>Superficial lesion: \$213.00</p> <p>Testing may qualify for <a href="#">N.Y State contract</a> case subsidy.</p>	<p><b>Deep lesion:</b> (2) <b>fresh skin biopsies</b><sup>1,2,3,4</sup> in plain <b>RTT</b> with 0.5 ml sterile saline to keep moist (not wet) +/- <b>swab</b><sup>1,3</sup> <b>from deep in tissue</b> placed in aerobic transport media (Amies with charcoal), multiple <b>formalin fixed skin biopsies</b><sup>5</sup>. <b>SHIP CHILLED AND PROTECT FIXED TISSUE FROM FREEZING.</b></p> <p><b>Superficial lesion:</b> (1) <b>hair and skin scraping</b><sup>3,4</sup> for fungal culture and gram stain sent in a sealable paper envelope, (1) <b>skin scraping</b><sup>6</sup> for ectoparasite identification in an escape proof, non-porous container, (2) <b>impression smears/skin scrapings/fluid aspirates</b><sup>7</sup> for cytology placed on glass slides and air dried, and multiple <b>formalin fixed skin biopsies</b><sup>5</sup>. No aerobic culture is included in the superficial plan. <b>SHIP AT ROOM TEMPERATURE AND PROTECT FROM TEMPERATURE EXTREMES.</b></p>

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DIAGNOSTIC PLAN/PANEL	TESTS PERFORMED	PRICES	SAMPLES NEEDED
<b><i>Fever of Unknown Origin Diagnostic Plan</i></b>	<p>(3) <a href="#">Blood cultures, aerobic/fungal</a><sup>1</sup> (1 sensitivity included); (3) <a href="#">Blood cultures, anaerobic</a><sup>2</sup>; <a href="#">Fibrinogen (heat-precipitated)</a><sup>3</sup>; <a href="#">Hemogram, routine (CBC)</a><sup>4</sup> (examination for blood parasites included); (2) <a href="#">Virus isolations</a><sup>5</sup> (nasal, whole blood)</p> <p>If case is chronic, virus isolation can be omitted if desired, see comment to right. If not already performed a <a href="#">large animal chemistry panel</a> may be warranted and <b>serum</b> (separated) or <b>heparinized plasma</b> (separated from green top tube) would need to be submitted.</p>	<p>\$335.00</p> <p>Chronic case with no virus isolation: \$265.00</p> <p>Testing may qualify for <a href="#">N.Y State contract</a> case subsidy.</p>	<p>(3) Inoculated <b>aerobic/fungal blood culture bottles</b><sup>1</sup>, (3) inoculated <b>anaerobic blood culture bottles</b><sup>2</sup>, <b>nasal swab</b><sup>5</sup> in 0.5 ml saline to keep moist (not wet), (2) <b>tubes EDTA whole blood</b><sup>3,4,5</sup> (LTT), and (2) <b>air dried blood smears</b><sup>4</sup>. <b>SHIP CHILLED EXCEPT FOR SLIDES AND BLOOD CULTURE BOTTLES, WHICH ARE SHIPPED AT ROOM TEMPERATURE.</b> See <a href="#">Blood Culture Technique</a> for more information. To order blood culture bottles go to <a href="#">shipping services</a> or call 607.253.3935. It may be helpful to collect and bank a serum sample for possible acute and convalescent serology.</p> <p>This diagnostic plan is designed to detect a broad spectrum of systemic bacterial, viral, and some blood parasite causes of acute fever of unknown origin, as well as certain inflammatory changes which may assist in determining the underlying problems. Viral causes of illness are best detected acutely and most are unlikely to be detected in a patient with a chronic fever of unknown origin. This plan is intended to be used as an adjunct to targeted, disease-specific testing appropriate to the species, clinical history and geographic location or conditions. See <b>Small Animal Internal Medicine</b>, 5<sup>th</sup> Edition, 2014, Nelson RW and Couto CG; Chapter 88: <b>Fever of Unknown Origin</b>, pages 1279-1282 for other ideas of testing.</p>
<b><i>Large Animal Basic Workup</i></b>	<p><a href="#">Fibrinogen (heat-precipitated)</a><sup>1</sup>; <a href="#">Hemogram, routine (CBC)</a><sup>2</sup>; <a href="#">Large animal chemistry panel</a><sup>3</sup></p>	<p>\$105.00</p>	<p><b>EDTA whole blood</b><sup>1,2</sup> (LTT), (2) <b>air dried blood smears</b><sup>2</sup>, and <b>serum</b><sup>3</sup> (separated) or <b>heparinized plasma</b><sup>3</sup> (separated from a green top tube). <b>SHIP CHILLED EXCEPT FOR SLIDES WHICH SHOULD BE KEPT AT ROOM TEMPERATURE.</b></p>

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<b><u>Large Animal Liver Panel</u></b>	<a href="#">AST</a> ; <a href="#">SDH</a> ; <a href="#">GGT</a> ; <a href="#">GLDH</a> ; <a href="#">Total/Direct/Indirect Bilirubin</a> ; <a href="#">Total Protein</a> ; <a href="#">Albumin</a> ; <a href="#">Globulin</a> ; <a href="#">A/G Ratio</a> ; <a href="#">CK</a> ; <a href="#">Triglycerides</a>	\$25.00	<b>Serum</b> (separated) or <b>heparinized plasma</b> (separated from green top tube). <b>SHIP CHILLED</b>
<b><u>Large Animal Renal Panel</u></b>	<a href="#">Na</a> ; <a href="#">K</a> ; <a href="#">Cl</a> ; <a href="#">Bicarb</a> ; <a href="#">Anion gap</a> ; <a href="#">Urea</a> ; <a href="#">Creatinine</a> ; <a href="#">Albumin</a> ; <a href="#">Ca</a> ; <a href="#">P</a>	\$28.00	<b>Serum</b> (separated) or <b>heparinized plasma</b> (separated from green top tube). <b>SHIP CHILLED</b>
<b><u>Ovine Abortion Fetal Tissue Diagnostic Plan</u></b>	(3) <a href="#">Aerobic bacterial cultures</a> <sup>1</sup> Listeria included (1 sensitivity included); <a href="#">Bovine Virus Diarrhea Virus (BVDV) FA</a> <sup>2</sup> ; <a href="#">Bovine Virus Diarrhea Virus (BVDV) SN, Type 1</a> <sup>3</sup> and <a href="#">Type 2</a> <sup>4</sup> ; <a href="#">Campylobacter fetus (Vibrio) culture</a> <sup>5</sup> ; (2) <a href="#">Campylobacter fetus (Vibrio) FAs</a> <sup>6</sup> ; <a href="#">Chlamydomphila FA</a> <sup>7</sup> ; <a href="#">Chlamydomphila PCR</a> <sup>8</sup> ; <a href="#">Histopathology</a> <sup>9</sup> ; <a href="#">Field Necropsy Surcharge</a> <sup>9</sup> ; (2) <a href="#">Leptospira PCRs</a> <sup>10</sup> ; <a href="#">Toxoplasma FA</a> <sup>11</sup> ; <a href="#">Toxoplasma gondii IgG ELISA</a> <sup>12</sup> ; <a href="#">Virus isolation</a> <sup>13</sup>  May also want to consider adding <a href="#">Selenium</a> to <b>fetal liver</b> especially if stillbirths and/or neonatal deaths are involved.	\$624.75 per fetus  Testing may qualify for <a href="#">N.Y State contract</a> case subsidy.	<b>Fresh tissue</b> <sup>1,2,5,6,7,8,10,11,13</sup> : lung, placenta including cotyledons, abomasal contents, kidney, liver, heart, adrenal, skin, <b>heart blood</b> <sup>3,4,12</sup> in sterile red top tube AND <b>Formalin fixed tissue</b> <sup>9</sup> : placenta, liver, lung, brain, adrenal, heart, thymus, small intestine, kidney, fetal skin. <b>SHIP FRESH TISSUE CHILLED AND PROTECT FIXED TISSUE FROM FREEZING. Kit is available.</b> See <a href="#">Ruminant Abortion Kit</a> for more complete instructions. If full necropsy desired, see <a href="#">Necropsy Testing</a> .

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<b><i>Ovine Abortion Serology Panel + Selenium</i></b>	<p><a href="#">Bovine Virus Diarrhea Virus (BVDV) SN, Type 1<sup>1</sup></a> and <a href="#">Type 2<sup>2</sup></a>;  <a href="#">Chlamydophila CF<sup>3</sup></a>; <a href="#">Leptospira MAT, 5 standard serovar<sup>4</sup></a>;  <a href="#">Selenium, (whole blood)<sup>5</sup></a>;  <a href="#">Toxoplasma gondii IgG ELISA<sup>6</sup></a></p> <p>If history indicates may also want to consider <a href="#">Brucella ovis ELISA*</a> which is performed on <b>serum</b>.</p>	<p>\$104.00 single</p> <p>\$180.00 paired (1 selenium)</p> <p>Testing may qualify for <a href="#">N.Y State contract</a> case subsidy.</p>	<p><b>Maternal serum<sup>1,2,3,4,6</sup></b> (separated) and <b>maternal EDTA whole blood<sup>5</sup></b> (LTT) <b>SHIP CHILLED.</b></p> <p>When acute and convalescent samples are/will be collected, for most serology assays they should always be tested in parallel, and paired results interpreted. If acute samples are submitted alone please indicated if all tests should be performed. If second, convalescent samples are later submitted, tests on both samples will be run in parallel and fees for both samples will be charged. To avoid testing acute samples twice, hold and submit with convalescent samples. If convalescent samples will not be collected, or when infectious abortion is strongly suspected due to history, immediate testing of acute sample may be warranted.</p>
<b><i>Ovine Diarrhea Diagnostic Plan</i></b>	<p><a href="#">Fecal quantitative<sup>1</sup></a>; <a href="#">Johne's Commercial ELISA<sup>2</sup></a>; <a href="#">Salmonella culture<sup>3</sup></a> (no sensitivity included)</p> <p><a href="#">Johne's Culture, Non-Bovine</a> on fresh feces may also be warranted. The lag time for culture is 12-16 weeks although positive samples may be shorter.</p> <p>In neonatal lambs, an <a href="#">Aerobic bacterial culture</a> and a <a href="#">Rotavirus Latex Antigen Detection, Group A</a> on <b>feces</b> should also be considered.</p>	<p>\$52.00</p> <p>Testing may qualify for <a href="#">N.Y State contract</a> case subsidy.</p>	<p><b>Fresh Feces<sup>1,3</sup></b> in leak-proof container (20 g) and <b>serum</b> (separated)<sup>2</sup>. <b>One fecal sample<sup>3</sup></b> (1 g, fill to line on container but do not overfill) can be put in ParaPak<sup>®</sup> transport media to assist with Salmonella recovery. <a href="#">ParaPak<sup>®</sup> transport media is available.</a> <b>SHIP CHILLED, EXCEPT FOR PARAPAK<sup>®</sup> WHICH SHOULD BE KEPT AT ROOM TEMPERATURE.</b></p>

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<p><b><i>Ovine Neurologic Diagnostic Plan</i></b></p> <p><b>PLEASE STRONGLY CONSIDER RABIES TESTING AT YOUR STATE HEALTH DEPARTMENT</b></p>	<p><a href="#">Aerobic bacterial culture</a><sup>1</sup>; <a href="#">Histopathology</a><sup>2</sup>; <a href="#">Lead, blood</a> or <a href="#">Lead, tissue</a><sup>3</sup>; <a href="#">Listeria culture</a><sup>4</sup></p> <p>May also want to consider <a href="#">Cerebrospinal Fluid Cytology</a> which requires <b>CSF in EDTA tube (LTT)</b> and (2) <b>air dried slides</b> of CSF. Protect slides from formalin exposure.</p> <p>If whole head is submitted a rabies brain extraction fee will be applied. Please submit completed <a href="#">NYS rabies specimen history form</a> and write out clear instructions on what additional diagnostic tests should be performed.</p>	<p>\$229.50</p> <p>Testing may qualify for <a href="#">N.Y State contract</a> case subsidy.</p>	<p><b>CSF</b><sup>1</sup> sample taken using sterile technique and placed in sterile red top tube +/- (1) <b>swab</b><sup>1</sup> inoculated with <b>CSF, OR (1) swab</b><sup>1</sup> of meninges prior to contamination and placed in aerobic transport media (Amies with charcoal), <b>fresh brain (preferably brainstem)</b><sup>4</sup> placed in sterile container, <b>EDTA or Heparin whole blood</b><sup>3</sup> (LTT or GTT) or <b>fresh liver</b><sup>3</sup> in sterile container, full set of <b>fixed tissues</b><sup>2</sup> placed in formalin, including multiple sections of brain and spinal cord. <b>SHIP CHILLED AND PROTECT FIXED TISSUE FROM FREEZING. PLEASE INDICATE IF RABIES TESTING IS PENDING.</b> See <a href="#">Tissues for Rabies Diagnosis</a> for photos of brain samples needed for rabies testing.</p>
<p><b><i>Small Ruminant/Camelid Pinkeye Diagnostic Plan</i></b></p>	<p><a href="#">Aerobic bacterial culture</a><sup>1</sup>; <a href="#">Chlamydomphila PCR</a><sup>2</sup>; <a href="#">Mycoplasma culture</a><sup>3</sup></p>	<p>\$103.75</p> <p>Testing may qualify for <a href="#">N.Y State contract</a> case subsidy.</p>	<p><b>Conjunctival swab</b><sup>1,3</sup> in aerobic transport media (Amies w/out charcoal), <b>conjunctival swab</b><sup>2</sup> in sterile tube with 0.5 ml saline to keep moist (not wet). <b>SHIP CHILLED.</b></p>

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<b>Small Ruminant Respiratory (Acute) Diagnostic Plan</b>	<p><a href="#">Aerobic bacterial culture</a><sup>1</sup> (1 sensitivity included); <a href="#">Bovine Respiratory Syncytial Virus (BRSV) FA</a><sup>2</sup>; <a href="#">Chlamydia PCR</a><sup>3</sup>; <a href="#">Cytology</a><sup>4</sup>; <a href="#">Fibrinogen (heat-precipitated)</a><sup>5</sup>; <a href="#">Hemogram routine (CBC)</a><sup>6</sup>; <a href="#">Histopathology</a><sup>7</sup>; <a href="#">Field Necropsy Surcharge</a><sup>7</sup>; <a href="#">Mycoplasma Culture</a><sup>8</sup>; <a href="#">Virus Isolation</a><sup>9</sup></p> <p>Testing for evidence of lungworms, <a href="#">quantitative fecal</a> may be warranted depending on season. Also <a href="#">selenium</a> on an <b>EDTA whole blood</b> sample or <b>liver</b> and <a href="#">vitamin E</a> on a <b>serum</b> sample (separated) may be appropriate in some situations. Limited serology testing is available but <a href="#">Ovine Progressive Pneumonia (OPPV) AGID</a> on a single <b>serum</b> sample in chronic disease or paired acute and convalescent <b>serum</b> samples for <a href="#">BRSV SN</a> in acute disease episodes may be warranted.</p>	<p>\$329.75 (ante mortem samples)</p> <p>\$349.25 (full set of necropsy samples)</p> <p>Testing may qualify for <a href="#">N.Y State contract</a> case subsidy.</p>	<p>Ante mortem samples: <b>transtracheal wash</b> (TTW)(preferred sample) or bronchial alveolar lavage (BAL) fluid in <b>RTT</b><sup>1,2,3,8,9</sup> (alternatively can use viral transport media), and in EDTA tube<sup>4</sup>(LTT), (2) <b>air dried slides</b><sup>4</sup> of fluid, (1) <b>swab inoculated with sample</b><sup>1,8</sup> placed in aerobic transport media (Amies w/o charcoal), <b>EDTA whole blood</b><sup>5,6</sup> (LTT), and (2) <b>air dried blood smears</b><sup>6</sup>. <b>SHIP CHILLED EXCEPT FOR SLIDES WHICH SHOULD BE AT ROOM TEMPERATURE.</b></p> <p>See <a href="#">Transtracheal Wash Procedure</a> for more information. It may be helpful to collect and bank a serum sample for possible acute and convalescent serology. [<b>Nasal or pharyngeal swabs</b><sup>3,9</sup> are only appropriate for virus isolation and PCR. Submit in viral transport media or a RTT with a 0.5 ml sterile saline for virus isolation and PCR. <b>SHIP CHILLED.</b>]</p> <p><b>Necropsy samples:</b> Section of <b>fresh lung</b><sup>1,2,3,8,9</sup> +/- 1 <b>swab</b> inoculated with sample<sup>1,8</sup> and placed in aerobic transport media (Amies w/o charcoal) and <b>full set of tissues</b><sup>7</sup> placed in formalin. <b>SHIP FRESH TISSUE CHILLED AND PROTECT FIXED TISSUE FROM FREEZING.</b></p>

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