Upper Alimentary Ulcerative Syndrome (UAUS)
Research project

Sampling guidelines and pack information

“Case” herd definition:
“Case” herds contain 5 or more weaned dairy calves (up to 8 months of age) with diarrhoea and/or weight loss OR with 1 or more weaned dairy calves (up to 8 months of age) with oral/nasal ulceration (+/- diarrhoea and weight loss)

Materials provided in each sample pack (sufficient for investigation of one herd)
- keep in your car (excluding VTM)
  • General information document
  • Case herd sampling flowchart
  • Animal ethics project approval and memorandum forms (please retain a copy of these)- Included in the initial pack sent.
  • AgriBio study-specific submission sheet
  • Producer claim form (in the event a calf is euthanised)
  • Case Herd Questionnaire
  • SOPs (Included in the initial pack sent):
    o Faecal collection by rectal grab
    o Blood sampling from jugular vein
    o Heifer live weight assessment (girth tape)
    o Blood sampling from tail vein
    o Measuring of rectal temperature
    o Cattle handling and restraint
    o Calf euthanasia
    o Performing a necropsy/post-mortem for UAUS
  • Labels (waterproof) for sample tubes and pots x 80
  • Pre-addressed courier consignment note for sample transport to AgriBio
  • Dry swabs (x 20)
  • Plastic bags for samples (in case of leakage)
  • These Sampling Guidelines
  • Viral transport media (VTM) will be supplied separately and will need to remain frozen at the clinic until required. The media contains preservatives which can lose effect if kept over 4°C or if repeatedly frozen and thawed. Once thawed, the VTM should be kept cool. Please contact your DEDJTR veterinary officer for these.

Materials required but not provided in the sample pack (to be provided by the sampling clinic):
  • Red top (whole blood) and purple top (EDTA) vacutainers (minimum of 10 of each)
  • Yellow-topped pots for fresh faecal sample collection x 10
  • Additional pots for collection of fixed and fresh tissue (minimum of 20 pots/herd)
  • Thermometer
  • Sample packaging
  • Chiller brick
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Details of sampling procedure.
Ensure all samples are labelled with the date, PIC, animal tag number and veterinarian name using the weather-proof labels provided in the sample pack.

- Visually assess all affected calves, including a close evaluation of the tongue and oral/nasal cavities for ulceration.
- If the herd meets the definition of a “case” herd (see above), identify up to 5 clinically affected calves, preferably those with ulcers (+/- diarrhoea and/or weight loss) and 5 calves that do not show any clinical signs from the same mob.
- Restrain the calves (as per SOP 221) and collect the following samples from each calf to a maximum of 5 “clinical” calves and 5 “non-clinical” calves:
  - 20 gms of fresh faeces from the rectum into a sample pot (as per SOP 1403).
  - Swab of the faeces collected above. Store for transport in your vehicle and add the snapped off swab head to thawed VTM once you’ve returned to the clinic.
  - Swab of any oral/nasal ulcers. Vigorously rub the affected area to ensure sufficient material is collected. If there are no obvious ulcers, take a swab of the underside of the tongue. Store and add to VTM in same way as faecal swab.
  - 10 ml of whole blood (1 x red-top vacutainer) (as per SOPs 101 (tail vein) or 102 (jugular))

Also collect the following measurements for each calf and record on the submission sheet:
- Calf tag number, age (in months) and breed
- Rectal temperature (as per SOP 185)
- Estimate calf bodyweight using the provided girth tape (as per SOP 1808)
- Description of diarrhoea, oral/nasal ulcers and any other visible clinical signs (if present)
- Description of any recent treatments provided to each calf (in last 30 days), including anthelmintic, coccidiostat, mineral supplement or antibiotic.

- On agreement with the owner, euthanise and post-mortem ONE clinically affected calf with oral or nasal ulceration that you have already sampled for blood, faeces and swabs (if no oral/nasal ulceration is observed in any calves, euthanasia is not required).
  **Note:** Samples from the upper alimentary tract, in particular the oesophagus, MUST be included. The following samples are critical for diagnosis and no post mortem payment will apply if these samples are not collected.
  - Formalin fixed - oral tissue, oesophagus, SI (jejenum and/or ileum) and colon.
  - Fresh - oral swab or tissue (in VTM), oesophageal swab or tissue (in VTM), clotted blood and/or spleen
  - Fully exteriorize the tongue, pharynx and oesophagus to the abomasum and check for ulcers – take fresh and fixed samples from the active edge of any lesions.

  - Place any fresh samples into individual pots on-farm with the location indicated on the label. Fresh samples should be 3-5 mm in maximum dimension. Place into individual VTM vials once back at the clinic.
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- Place all fixed samples into a single pot. Each sample should be 20-30 mm in maximum dimension with an optimum tissue/formalin ratio of 1:10. You do not need to write the tissue locations of fixed samples on the label.

  - Also take fresh and formalin-fixed samples of “normal” tissue from the oral cavity, pharynx, oesophagus, rumen and abomasum (if samples of lesions haven’t already been taken from these locations).
    - Place all fresh samples into individual pots on-farm with the location indicated on the label. Fresh samples should be 3-5 mm in maximum dimension. Place into individual VTM vials once back at the clinic.
    - Place all fixed samples into a single pot. Each sample should be 20-30 mm in maximum dimension with an optimum tissue/formalin ratio of 1:10.

- Examine the entire lower alimentary tract from the abomasum to the colon. Regardless of whether lesions are present, take formalin-fixed specimens (only) from the duodenum, jejunum, ileum, caecum, colon, mesenteric lymph node, liver and kidney.
  - Place all fixed samples into a single pot. Each sample should be 20-30 mm in maximum dimension with an optimum tissue/formalin ratio of 1:10.

- Also take fresh samples from the ileum, colon and spleen.
  - Should be 10-15 mm in maximum dimension (Note: larger than fresh samples taken from the upper alimentary tract) and placed in individual pots.
  - Take a fresh and fixed sample from any lesion observed in the lower alimentary tract. Place fixed samples into a single pot and fresh samples into individual VTM vials once back at the clinic.

See table below for summary of above post-mortem sample guidelines.
Upper Alimentary Ulcerative Syndrome (UAUS)  
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<table>
<thead>
<tr>
<th>TISSUE</th>
<th>ULCERATED tissue (if present)</th>
<th>'NORMAL' tissue (if ulcerated tissue hasn’t already been sampled)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FRESH – into individual VTM vials</td>
<td>FRESH – into individual VTM vials</td>
</tr>
<tr>
<td></td>
<td>(All 3-5 mm)</td>
<td>(All 20-30 mm)</td>
</tr>
<tr>
<td>Oral cavity</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>(3-5 mm)</td>
<td></td>
</tr>
<tr>
<td>Pharynx</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>(3-5 mm)</td>
<td></td>
</tr>
<tr>
<td>Oesophagus</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>(3-5 mm)</td>
<td></td>
</tr>
<tr>
<td>Rumen</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>(3-5 mm)</td>
<td></td>
</tr>
<tr>
<td>Abomasum</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>(3-5 mm)</td>
<td></td>
</tr>
<tr>
<td>Duodenum</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Jejunum</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Ileum</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>(10-15 mm)</td>
<td></td>
</tr>
<tr>
<td>Caecum</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Colon</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>(10-15 mm)</td>
<td></td>
</tr>
<tr>
<td>Mesenteric lymph node</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liver</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spleen</td>
<td></td>
<td>Y</td>
</tr>
<tr>
<td>Kidney</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please ensure:
1) All samples are correctly labelled
2) The AgriBio submission form is fully completed
3) The Animal Welfare Report at the bottom of the submission form is completed and signed. This is a compulsory requirement for the Animal Ethics Committee.
4) Please take photos of the live calves and post-mortem tissues where possible and email these to vet.diagnostics@ecodev.vic.gov.au with the date and property name.
Transport of samples to AgriBio.

- Please keep the samples cool at all times (refrigerate (4°C); do not freeze) and organise transport as soon as possible post-sampling
- To ensure samples arrive chilled please send with a cooling brick
- Place formalin samples in the plastic bags provided in case of leakage.
- Affix the courier consignment note to the esky. Details of the courier service are included on the label
- If you have any issues with transporting the samples, please call AgriBio Specimen reception on 03 9032 7515.
- The address for samples is:

  AgriBio Specimen reception  
  Main Loading Dock  
  5 Ring Rd  
  Latrobe University  
  Bundoora 3083

If you have any questions, concerns or require additional sample packs, please contact:
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