Checklist for TSE surveillance program – CATTLE and SHEEP

As at 28 September 2017

- Contact Emma or Rowena to confirm animal/s are eligible for TSE rule out
- Examine animal while it is alive. Up to 2 animals per disease incident per property
- Animal/s clinically consistent with BSE or Scrapie? (at least two clinical signs)
- Cattle: age > 30 months but < 9 years
  Sheep: age > 18 months but < 5 years
- Consider differential diagnosis
- Collect appropriate samples for TSE exclusions and your differential diagnoses
- Fill in Clinical History and Post Mortem report form
- Fill in AHL submission form – full history, indicate this is a TSE exclusion
- Give compensation claim form to owner of animal/s
- Pack samples correctly and send to AHL Mt Pleasant

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PAYMENT FOR ELIGIBLE SAMPLES:

**Cattle:**
Owner can claim $300 (ex GST) for eligible cattle
Practice can claim $300 (ex GST) for services to collect samples PLUS $25 for freight

**Sheep:**
Owner can claim $100 (ex GST) for eligible sheep
Practice can claim $200 (ex GST) for services PLUS $25 for freight

Laboratory testing for TSE and differential diagnoses at AHL is provided, allowing diagnosis at a reduced cost.

More information and forms for download are available at:

**Cattle: ‘Clinically consistent’** - at least two of the following clinical signs verified by examination of live cattle by a veterinarian:

<table>
<thead>
<tr>
<th>Mental status</th>
<th>Sensation</th>
<th>Posture and movement</th>
</tr>
</thead>
<tbody>
<tr>
<td>• altered consciousness</td>
<td>• blindness</td>
<td>• abnormal ear position</td>
</tr>
<tr>
<td>• apprehension</td>
<td>• excessive licking of nose and flank</td>
<td>• abnormal head carriage</td>
</tr>
<tr>
<td>• behaviour change</td>
<td>• head rubbing or pressing</td>
<td>• ataxia</td>
</tr>
<tr>
<td>• excitability</td>
<td>• head shyness</td>
<td>• circling</td>
</tr>
<tr>
<td>• frenzy</td>
<td>• hyperaesthesia (sound, touch)</td>
<td>• falling</td>
</tr>
<tr>
<td>• hesitation at doors, gates, barriers</td>
<td>• hypoaesthesia (sound, touch)</td>
<td>• fetlock knuckling</td>
</tr>
<tr>
<td>• herd hierarchy change</td>
<td>• kicking persistently when milked</td>
<td>• paralysis/paresis</td>
</tr>
<tr>
<td>• moribund without evidence of infection or trauma</td>
<td></td>
<td>• recumbency</td>
</tr>
<tr>
<td>• teeth grinding</td>
<td></td>
<td>• tremor</td>
</tr>
</tbody>
</table>

**Cattle: Differential Diagnoses:**
- Trauma
- Nutritional myopathy - Vit E or Selenium deficiency
- Metabolic diseases - hypo mag, hypo cal, nervous acetonemia, hepatic or renal encephalopathy, PEM, heat stress.
- Infectious Diseases - brain or spinal abscess, listeriosis, thromboembolic meningo-encephalomyelitis, sporadic bovine encephalomalacia, bovine malignant catarrhal fever, focal symmetrical encephalomalacia, bovine ephemeral fever (exotic to Tasmania), rabies (exotic).
- Toxicity: lead, plant, botulism, urea toxicoses, snakebite.
- Genetic
- Neoplasia
Sheep: ‘Clinically consistent’ - at least two of the following clinical signs verified by examination of live sheep by a veterinarian.

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<td>• hypoaesthesia (sound, touch)</td>
<td>• circling</td>
</tr>
<tr>
<td>• frenzy</td>
<td>• rubbing/itching</td>
<td>• falling</td>
</tr>
<tr>
<td>• moribund without evidence of infection or trauma</td>
<td>• wool loss (flank and hind quarter)</td>
<td>• fetlock knuckling</td>
</tr>
<tr>
<td>• temperament change</td>
<td></td>
<td>• paralysis/paresis</td>
</tr>
<tr>
<td></td>
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Sheep: Differential Diagnoses:

- Parasites: eg lice
- Metabolic diseases (hypomagnesaemia or hypocalcaemia), polioencephalomalacia, hepatic and renal encephalopathy, copper deficiency, Vitamin E or selenium deficiency (nutritional myopathy).
- Infectious Diseases (brain or spinal abscess, listeriosis, Histophilosis, melioidosis, focal symmetrical encephalomalacia, rabies (exotic).
- Toxicity: lead, plant, perennial ryegrass staggers, phalaris staggers, botulism.
- Genetic e.g. cervicothoracic vertebral subluxation and ataxia.
- Neoplasia

Required Samples:

**Essential:**
Cattle: Whole brain fixed in 10% buffered formalin and 2-3 cm of cervical spinal cord and/or medulla caudal to the obex unfixed but chilled.
Sheep: as for cattle PLUS the top third of the cerebellum via horizontal approach.

**Samples for Differential Diagnosis:**
If animal is euthanased by vet: tissue samples (fresh and fixed), blood (EDTA and serum), blood smear, faeces, GI contents.
If animal has already died (i.e. vet examined live but then died): whole fresh eye or sample of aqueous fluid, plus fresh and fixed tissue samples, faeces and GI contents.
If unsure of extra samples: contact pathologists at Mt Pleasant (03 6777 2111)

Resources for brain sampling technique:
Training video [https://www.youtube.com/watch?v=UN4DVoHnsps](https://www.youtube.com/watch?v=UN4DVoHnsps)
Or ask your regional Veterinary Officer for a printed instruction sheet

**Packing and posting samples:**
Ensure that: the specimens are securely and correctly packaged for transport AND all relevant details accompany the specimens, especially the required laboratory submission form and the Clinical history and post mortem report

**Fresh Specimens** - some fresh/chilled specimens (i.e. for microbiological culture, blood for biochemistry and haematology) should be dispatched on the day of collection to ensure handling at the laboratory as soon as practicable after death. The specimens must be sent with the laboratory submission form and the Clinical history and post mortem report with a clear indication that fixed specimens will follow. The cervical spinal cord and/or medulla caudal to the obex if kept chilled can be submitted with the fixed brain a few days after collection.

**Fixed Specimens** - to avoid transporting heavy and dangerous volumes of formalin, adequately fixed tissues can be kept moist during transport by placing fixed tissues in a securely tied, double plastic bag with either: 50 ml of 10% formalin, or wrapped in formalin-soaked high absorbency paper towels. The brain and other fixed specimens should be sent to the laboratory with a submission form but indicating on the submission form that fresh specimens had been previously sent.