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Prepared by: Tristan Jubb

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Management of unfit to load export cattle and sheep

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Abstract

A small proportion of livestock are identified as being unfit to load onto ships during pre-embarkation inspections. These animals are identified as sick, injured, weak or physiologically unsuited for transport and must be managed optimally to ensure welfare is not unduly compromised. A manual was produced that will assist in standardising the approaches to treatment and management of these animals.
Content includes:

- information on the treatment and management of common diseases and conditions that are responsible for rejection of sheep and cattle prior to export by sea;
- criteria for assessment of when and where euthanasia, salvage slaughter, treatment or monitoring are necessary; and
- recommendations for management of rejected animals prior to road transport.

The information is intended to assist optimal health and welfare outcomes occurring for these compromised animals and allow exporters, managers of quarantine premises and veterinarians to meet regulatory requirements with more certainty. The A5 size of the manual is intended to increase its portability and use as a ready-reference.

Executive summary

The management of unfit to load or 'reject' sheep and cattle at both the port of loading and pre embarkation feedlot facility poses an animal welfare concern for these livestock. A small proportion of livestock are identified at embarkation onto livestock vessels as being unfit to load. Rejection of these livestock is necessary to avoid sick or injured animals being loaded onto ship. Reasons for rejection are varied and there is an animal welfare requirement that these animals are managed under veterinary supervision so that animal welfare is not unduly compromised.

The purpose of this project was to develop a standalone veterinary manual outlining best practice management and treatment guidelines for unfit to load livestock. It would provide an agreed, standardised approach to treatment and management for optimal health and welfare outcomes for these animals, and for veterinarians and feedlot managers to confidently meet regulatory requirements.

The Livestock Export Program sought to engage the services of suitably qualified researchers or consultants that were familiar with the live export industry as well as production animal medicine, disease and management. As a result, the organisation selected for completing this work was Livestock Health Systems Australia.

The company's area of expertise lies in developing systems for optimising animal health and welfare outcomes in livestock enterprises. Its principal, Dr Tristan Jubb, has considerable experience in production animal medicine, disease and management and is closely familiar with the livestock export industry. He has also had involvement in the MLA LiveCorp project W.LIV.0278 - Live Export Veterinary Disease Handbook and in a number of previous projects involving live animal exports from Australia.

The manual was written by Dr Jubb with the assistance of Dr Richard Norris, Senior Veterinary Officer of DAFWA, and a leading industry researcher and policy advisor.
The Terms of Reference for the manual were as follows:

1. Develop a manual for livestock exporters which describes the recommended veterinary management of livestock that are identified as being not fit for transport by sea. The manual will include but not be limited to the following:
    a. Treatment, prevention and management of diseases and conditions which are responsible for rejection of sheep and cattle prior to export by sea.
    b. Criteria to assess when and where humane slaughter is necessary
    c. Veterinary recommendations for management of rejected animals prior to road transport

And to provide the following outcomes for the livestock industry and exporters:

1. Improved welfare practices in currently underperforming livestock operations
2. Improved defence against industry opponents for those enterprises following/exceeding standard guidelines
3. Improved peace of mind, legal protection and confidence of industry operators responsible for pre-embarkation inspections and subsequent management of rejects.

As a result, an A5 size manual was produced. Its content is presented in four main chapters:

1. Treatment and management of common diseases and conditions of unfit to load cattle
2. Treatment and management of common diseases and conditions of unfit to load sheep

3. Considerations for euthanasia and other management options for animals rejected at pre-embarkation inspections
4. Recommendations for management of reject animals prior to and during road transport

The A5 size of the manual is intended to increase its portability and use as a ready-reference.
Every effort was made to ensure relevance and accuracy by:

- consulting AQIS accredited veterinarians who perform pre-embarkation inspections of sheep and cattle and other industry operators,
- reference to the following publications:
    - Australian Animal Welfare Standards and Guidelines - Land Transport of Livestock (Animal Health Australia)
    - The MLA brochure: “Is if fit for loading?”
    - Australian Standards for Export of Livestock (ASEL V2.3)
    - Live export veterinary disease handbook (of current MLA/LiveCorp project W.LIV.0278).
- providing information based on veterinary best practice drawn from modern scientific publications and that was suited to and able to be integrated into the routines of industry.

Contents

1 Background

The management of unfit to load or 'reject' sheep and cattle at both the port of loading and pre embarkation feedlot facility poses an animal welfare concern for these livestock. A small proportion of livestock are identified at embarkation onto livestock vessels as being unfit to load. Rejection of these livestock is necessary to avoid sick or injured animals being loaded onto ship. Reasons for rejection are varied and there is an animal welfare requirement that these animals are managed under veterinary supervision so that animal welfare is not unduly compromised.

The purpose of this project was to develop a standalone veterinary manual outlining best practice management and treatment guidelines for unfit to load livestock. It would provide an agreed, standardised approach to treatment and management for optimal health and welfare outcomes for these animals, and for veterinarians and feedlot managers to confidently meet regulatory requirements.

2 Project objectives

Develop a manual for livestock exporters which describes the recommended veterinary management of livestock that are identified as being not fit for transport by sea. The manual will include but not be limited to the following:

a. Treatment, prevention and management of diseases and conditions which are responsible for rejection of sheep and cattle prior to export by sea.
b. Criteria to assess when and where humane slaughter is necessary
c. Veterinary recommendations for management of rejected animals prior to road transport

3 Results and discussion

The draft 'Management of unfit to load export cattle and sheep' manual is attached in Appendix 1. The manual has been developed as an A5 document to allow for easier desktop editing and publishing.

4 Success in achieving objectives

All objectives have been successfully completed. The manual has been peer reviewed by Dr Richard Norris (DAFWA) and a copy has been provided to the Australian Veterinary Association for feedback. The manual has been provided to MLA (Appendix 1) for editing and desktop publishing.

5 Impact on meat and livestock industry – now and in five years time

The outcomes for the livestock industry and exporters:

1. Improved welfare practices in currently underperforming livestock operations
2. Improved defence against industry opponents for those enterprises following/exceeding standard guidelines
3. Improved peace of mind, legal protection and confidence of industry operators responsible for pre-embarkation inspections and subsequent management of rejects.

6 Conclusions and recommendations

It is recommended that this manual be desktop edited and published by MLA. Copies should then be made available to all exporters and AQIS Accredited Veterinarians.

7 Appendices

7.1 Appendix 1 – Draft Management of unfit to load export cattle and sheep

MANAGEMENT OF UNFIT TO LOAD LIVESTOCK

GUIDELINES FOR PERSONS-IN-CHARGE AND VETERINARIANS INVOLVED IN PRE-EMBARKATION LIVE EXPORT INSPECTIONS OF SHEEP AND CATTLE

Tristan Jubb, Richard Norris

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Contact
Meat and Livestock Australia Ph 02 9463 9333 Livecorp Ph 02 9929 6755
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1. INTRODUCTION

A small proportion of livestock are identified as being unfit to load onto ships during pre-embarkation inspections. These animals are identified as sick, injured, weak or physiologically unsuited for transport and must be managed optimally to ensure welfare is not unduly compromised. The information provided in this manual will assist in standardising the approaches to treatment and management of these animals. Content includes:

- Information on the treatment and management of common diseases and conditions that are responsible for rejection of sheep and cattle prior to export by sea;
- Criteria for assessment of when and where euthanasia, salvage slaughter, treatment or monitoring are necessary; and
- Recommendations for management of rejected animals prior to road transport.

The information is intended to assist optimal health and welfare outcomes occurring for these compromised animals and allow exporters, managers of quarantine premises and veterinarians to meet regulatory requirements with more certainty. The A5 size of the manual is intended to increase its portability and use as a ready-reference.
Every effort has been made to ensure relevance and accuracy by consulting industry experts and reference to the following publications:

- Australian Animal Welfare Standards and Guidelines - Land Transport of Livestock (Animal Health Australia)
- The MLA brochure: “Is if fit for loading?”
- Australian Standards for Export of Livestock (ASEL V2.3)
- Live export veterinary disease handbook (of current MLA/LiveCorp project W.LIV.0278).

There may however be inconsistencies with State and Territory acts and regulations with regard to loading and transport of animals, in which case advice from appropriate local professionals and experts should be sought. Persons responsible for animals are expected to be familiar with the relevant animal welfare legislation.

2. TREATMENT AND MANAGEMENT OF COMMON DISEASES AND CONDITIONS OF UNFIT TO LOAD CATTLE

The following diseases and conditions are those most commonly identified in animals rejected at assembly points and at the wharf as unfit to load onto a livestock vessel.

Treatments and management during convalescence would ordinarily take place in the quarantine premises at which the pre-embarkation inspection took place. This may be a feedlot or farm. However urgent treatments may sometimes need to be administered to sick and injured animals on a transport vehicle or at the wharf (if the pre-embarkation inspection occurred there), after which the animals may be transported back to the quarantine premises for further treatment and care. See section 5 for information on management of reject animals prior to and during road transport.

Sheep and cattle separated from their herd and flock mates may become severely distressed, therefore animals under treatment or being monitored should not be confined alone – they should be penned, yarded and managed in the company of a small group of quiet, easily handled animals

Eye conditions

- Pinkeye (Infectious keratoconjunctivitis)
    - Handle severe cases carefully to prevent bumping of the eye and risk of corneal rupture.
    - Without treatment, most cases of pinkeye, even severe infections, will fully recover with no or minimal scarring. However, treatment is recommended as progression of disease is unpredictable and some animals may be permanently blinded from corneal rupture or extensive scarring.
    - If there is recent history suggesting grass seeds, chaff or other foreign bodies having entered the eye, each affected animal should be restrained in a crush with head bale, halter and nose grips and undergo close eye examination, especially of the conjunctival sacs.

- Treat with parenteral antibiotics - procaine penicillin and oxytetracycline are preferred but almost any antibiotic will be effective. Antibiotic treatment can stop once signs of recovery are evident which in early cases may be after one day.
- Non steroidal anti-inflammatory drugs (flunixin meglumine, ketoprofen, meloxicam, tolfenamic acid) will reduce pain and may reduce scarring.
- In animals with severe corneal ulceration and imminent corneal rupture, there may be benefit from applying an eye patch, suturing the eyelids closed (ensuring suture material does not rub against the cornea) or performing a third eye lid flap (where the third eye lid is drawn across the cornea and anchored to the skin at the lateral corner of the eye with a suture).
- Avoid co-mingling with animals susceptible to infection (young, unexposed or unvaccinated) and reduce exposure to dust, flies, sunlight and grass seeds until healing has commenced.

Lameness

- Foot rot (interdigital necrobacillosis)
    - Inspect the foot and remove any foreign bodies that may be lodged in the interdigital cleft.
    - Administer parenteral antibiotics only (procaine penicillin, oxytetracycline, florfenicol); topical treatment and bandaging are unnecessary.
    - The prognosis is excellent if treated early with a maximal dose of antibiotics, recovery (reduced lameness and swelling) beginning within a few hours and completed within one to two days. If the lameness does not resolve in a few days, check for extension of

infection into to deeper structures, an interdigital foreign body, solar abscess or other lesion.

- In severe, chronic lameness, where joint or other deeper structures are affected, amputation of the claw may be required. Cattle can walk adequately on one claw.

- Solar abscesses, sole puncture wounds, sole bruising

  - Early and aggressive treatment is required to prevent sepsis extending up the leg and serious incapacitation of the animal.

  - Solar abscesses and puncture wounds must be treated by initiating a course of parenteral antibiotics (procaine penicillin) and non steroidal anti-inflammatories (flunixin meglumine, ketoprofen, meloxicam, tolfenamic acid) followed by paring the under-run sole and hoof wall around the injury to establish drainage.

  - Confine and segregate affected animals to areas with gravel-free ground softened and dried by sawdust, straw or well drained pasture. Provide easy access to feed and water in a non-competitive environment. This will hasten recovery and make monitoring and treatment easier.

  - In severely lame animals with single claws of feet affected, apply a lift to the healthy claw of the affected foot in the form of a plastic shoe or wooden or plastic block glued to the sole. This will usually provide dramatic pain relief and keep the animal on its feet.

  - Prognosis is mainly dependent on severity of the soft tissue injury, stage at which drainage is established, body weight and temperament of the animal.

- Musculoskeletal injuries

  - Dislocated joints (ie hip, elbow, fetlock) require immediate intervention and expertise for successful reduction. Xylazine sedation or anaesthesia may be necessary to facilitate reductions.
  - Hobbling of hind legs to prevent the splits may be of benefit in weak animals but they must have a quiet temperament.
  - Limb bone fractures, longstanding limb dislocations (>24 hrs) and injuries causing extended recumbency (>24 hrs) demand euthanasia (refer to section 4)

- Wounds (Lacerations)
  - Wounds should be closely examined to determine damage to underlying tissues and the presence of foreign bodies. Good restraint, sedation and local anaesthesia may be required for this examination and subsequent treatment.
  - Treat superficial wounds with a topical antibiotic spray or lotion.
  - If possible, apply a pressure bandage if there is moderate to severe haemorrhage.
  - Principles of wound treatment are to apply lavage, debridement and where appropriate suturing and bandaging. This applies especially to large, deep, gaping and contaminated wounds if complications are to be avoided.

- Apply debridement by cutting or scraping away with a scalpel blade any blue-black, leathery or obviously necrotic tissue and gross contamination.
- Manage grossly contaminated wounds as open (unsutured) wounds using lavage, debridement and if on a limb, bandaging.
- Apply lavage using sterile saline or clean mildly salty water squirted under moderate pressure with a 35mL syringe and 19g needle.
- Suture wounds after lavage and debridement only if they are not grossly contaminated. Use tension relieving sutures if required and bandage if on a limb.

- Apply bandages to limbs that are close fitting, snug, long, firm and thick so they act like a cast. This can be achieved using rolls of gauze, cotton wool and elastic adhesive bandages. The objectives of bandaging are to stop bleeding, immobilise the area, prevent further trauma and contamination, keep the wound warm and prevent it drying out. Without bandaging, wound healing may be severely compromised.

- An inexpensive, easily applied waterproof conforming bandage suitable for emergency conditions can be made using rolls of plastic clingwrap, foam rubber and electrical or duct tape.

- Treat deep or penetrating wounds with a course of parenteral antibiotics (procaine penicillin, oxytetracycline, erythromycin, tylosin, ceftiofur).
- Administer non steroidal anti-inflammatories (flunixin meglumine, ketoprofen, meloxicam, tolfenamic acid) if animals are in pain.

- For the duration of recovery, provide clean, non-slip flooring in a non-competitive environment with easy access to food and water.

- Encourage affected animals to stand as much as possible.

Nervous disease

- Transit tetany (hypomagnesaemia/hypocalcaemia)

    - Administer under the skin over the ribs, multiple bags (2-4) of commercially available solutions containing both calcium borogluconate and magnesium sulphate and rub in well to hasten absorption into the bloodstream. Slow intravenous administration of half a bag (with the remainder under the skin) may be attempted in seriously affected animals but carries the risk of causing cardiac arrest and death.
    - As soon as possible, sit upright if in lateral recumbency, especially if bloated and to avoid inhalation of any regurgitated rumen contents.
    - Encourage to stand as soon as the animal has gathered its strength to avoid it becoming a downer.
    - Isolate from other animals until strength and coordination have fully recovered to avoid it being knocked down and injured. Then provide a small number of quiet cattle for company.
    - Relapse is rare, however the animal should be closely monitored for at least the next 24 hours.

- Polioencephalomalacia

    - If given early, 12-hourly treatments with injections of 50 mg/kg bodyweight thiamine (vitamin B1) usually

results in rapid improvement and eventual full recovery. Non-steroidal anti-inflammatory drugs may reduce brain swelling.
    - As soon as possible, sit recumbent animals upright if in lateral recumbency, to avoid bloating or inhalation of any regurgitated rumen contents.
    - Encourage to stand as soon as the animal has gathered its strength to avoid it becoming a downer.
    - Isolate from other animals until strength and coordination have fully recovered to avoid it being knocked down and injured.

Respiratory distress

- Heat stress (hyperthermia, heat stroke)
    - Relocate with minimum exertion to shaded, well-ventilated, uncrowded areas with easy access to good quality freely available water. Displace Bos indicus cattle if necessary to make space for affected Bos taurus cattle. Use feed- troughs to provide extra water if water trough space is limiting.
    - Spray wetting of the head and neck of affected animals may be lifesaving in severely affected animals. Continue until respiratory distress has eased.
- Pneumonia
    - Treat suspected cases aggressively with parenteral antibiotics (ceftiofur sodium, florfenicol, tilmicosin, tulathromycin, procaine penicillin, oxytetracycline, erythromycin, trimethoprim sulpha, tylosin) and non steroidal anti-inflammatory drugs (NSAIDs) such as flunixin meglumine, ketoprofen, meloxicam, or tolfenamic acid. NSAIDs have a role because damage to respiratory tract and clinical signs are the result of the body's powerful inflammatory response to pathogens.
    - Animals with concurrent arthritis may require treatment with antibiotics after respiratory signs have disappeared.

- Isolate in a well ventilated area protected from excessive cold or heat, maintain hydration and promote appetite by offering good quality hay or rough chopped chaff made from cereal hay.

Skin conditions

- Ringworm (Dermatomycosis)
  - Ringworm usually heals with or without treatment in about 6 to 8 weeks.
  - Topical application of preparations containing imidazole may stop progression of lesions and reduce spread to other animals on the premises. Topical preparations containing chlorine and iodine are much less effective.
  - Turning out into lightly stocked, dry, sunlit areas during the acute phase may be an adjunct or alternative to topical treatment.
  - The prognosis is excellent given time.
- Warts (Papillomatosis)
  - Treatment is usually unnecessary because self cure is common. The prognosis is usually excellent given time, lesions taking one month to a year to slough off. The exception is immunocompromised cattle such as those with persistent pestivirus infection that become progressively debilitated by enlargement, ulceration, bacterial infection and flystrike of the warts and require euthanasia.
  - Large, ulcerated or awkwardly located warts may require surgical removal, or ligation if pendunculated. Note that wart growth may be stimulated if surgery is performed too early - it is unknown what constitutes *too early*.
  - Isolating affected animals may offer little protection to other cattle on the premises because shedding of virus will have occurred during the long incubation period and

the virus is enduring in the environment for over one year.

- The prognosis is excellent except in immunocompromised animals such as those persistently infected with pestivirus.

Swellings

- Abscess
    - Treatment of the large noticeable skin and superficial lymph node abscesses that cause animals to be rejected at pre-embarkation inspections should only be attempted in circumstances where a timely, aesthetic outcome is achievable that would allow the animal to re-enter the export process. The alternative is salvage slaughter.
    - Treatment of large vaccination and other injection site abscesses involves incision and drainage. One must be confident the lump or swelling is an early stage abscess containing pus, not in-filled with fibrous tissue and is therefore suitable for draining. Cuts into fibrous lumps may result in profuse bleeding, infection, delayed healing and ugly scarring.
    - Before incising, double check that the swelling is fluid-filled and not an indurated fibrous lump, hernia or haematoma.
    - Restrain the animal using a crush (with sedation if fractious), or by anaesthesia.
    - Make a vertical incision extending downward from the most fluctuant point creating a wide opening to facilitate drainage. Flush thoroughly with clean water under moderate pressure from a hose or syringe using a gloved finger to gently aid removal of pus. Local anaesthesia is usually not required if the incision is made quickly with a new scalpel blade. In any case,

local anaesthesia may be difficult to administer effectively to the tensioned skin over the abscess.

- Antibiotics are not recommended as they are unlikely to penetrate the fibrous capsule and pus. The exception is if infection is spreading (or is likely to spread after incision) through the soft tissues around the abscess (ie cellulitis) or if the abscess is causing severe pain (ie the animal has a stiff neck and having difficulty feeding and watering) in which case anti-inflammatory drugs (flunixin meglumine, ketoprofen) and antibiotics (procaine penicillin, erythromycin) should be administered.
- Note that some abscesses left untreated will shrink with time which may allow the animal to re-enter the live export process however shrinkage may take many weeks or even months.
- Large abscesses of the lymph nodes of the head and neck (ie grass seed abscesses, cheesy gland abscesses) are notoriously difficult to treat successfully often requiring excision of the node, many weeks of antibiotic treatment and months to heal with no guarantee of complete healing. Affected animals should probably be sent for salvage slaughter.

- Congestive heart failure

  - The damage to the heart and the debilitating symptoms are irreversible therefore salvage slaughter is indicated for mild cases still fit to travel and euthanasia for other cases. Note that animals with traumatic reticulopericarditis are likely to be wholly condemned at slaughter and would be rarely fit to travel. This diagnosis should be excluded in heart failure cases that are judged fit to travel and consigned to an abattoir for salvage slaughter.

- Haematoma (Blood blister)
    - These are best left alone as usually they will heal spontaneously. Large haematomas will leave residual, sometimes unsightly skin folds. The temptation to insert a needle to determine contents or to lance and drain an intact haematoma should be resisted as the result is often an abscess or unsightly infected mess. Some will become abscesses and will need wide incision, flushing and draining.

- Hernia (traumatic hernia of the abdominal wall, scrotal, inguinal, rupture of prepubic tendon)
    - Surgical and bandaging options are available but are unlikely to be practical or successful.
    - Animals in distress should without delay be euthanased; those not distressed may be sent for emergency slaughter at a knackery or abattoir.
    - Pregnant animals may be induced to abort or calve with corticosteroids (dexamethasone) and prostaglandins (cloprostanol, dinoprost trometamolin) and should be assisted when this occurs.

- Lumpy jaw (Actinomycosis, “actino”)
    - Lumpy jaw is notoriously difficult to treat successfully. In valuable animals with early lesions, extended treatment with ceftiofur, oxtetracyclines or sodium iodide could be tried but relapse should be expected.
    - Strong consideration should be given to slaughtering affected animals before weight loss and the risk of condemnation occur.

- Wooden tongue (Actinobacillosis, “actino”, woody tongue)
    - Parenterally administered procaine penicillin or oxytetracycline, daily for at least three days is usually curative except in advanced cases where the tongue is irreversibly fibrosed.

3. TREATMENT AND MANAGEMENT OF COMMON DISEASES AND CONDITIONS OF UNFIT TO LOAD SHEEP

Diarrhoea

- Salmonellosis
    - Administer parenteral antibiotics (trimethoprim sulpha; oxytetracycline) until first signs of recovery detected.
    - Provide oral fluids containing isotonic or hypotonic concentrations of electrolytes
    - Feed cereal hay or rough cut chaff off the ground to stimulate appetite and restore digestion
    - Isolate from other at-risk animals in an area that protects them from heat and cold stress and provides ready access to good quality feed and water.
    - Blanket administration of antibiotics via drinking water is not recommended. Sick sheep are unlikely to drink enough and illness may be exacerbated by disruption to rumen microflora.
    - The prognosis is poor unless there is aggressive treatment of early stage disease.

- Other causes
    - Specific treatment will be dictated by diagnosis which may include ruminal acidosis, coccidiosis, indigestion (ie nutritional scours) and gastrointestinal parasitism.
    - Until the diagnosis is confirmed, or even if unconfirmed, sheep with diarrhoea will benefit from and may recover fully with the feeding of plentiful good quality cereal hay, ready access to clean fresh water and shelter in a clean, dry environment protected from heat and cold stress and competition from stronger sheep.

Eye condition/blindness

- Pinkeye
    - Individually restrain every affected sheep to closely examine eyes and remove grass seeds that may be irritating.
    - Administer parenteral antibiotics (oxytetracycline, procaine penicillin, trimethoprim sulpha) until first signs of recovery are evident. Only a single treatment may be required in early cases.
    - Administration of parenteral non-steroidal anti-inflammatory drugs is recommended for animals at risk of developing permanent, blinding eye damage.
    - Isolate from other at-risk animals in an area that minimises exposure to dust, flies, sunlight and long grass during the treatment phase.
    - Animals blind in both eyes require careful handling and feed and water management in hazard-free confined areas.
    - Topical treatments with sprays and powders have shown little or no benefit and some powders and aerosol sprays may be irritant and therefore detrimental. Parenteral antibiotics provide sustained therapeutic concentrations of antibiotic in tears and intraocular fluids which topical treatments do not do.
    - In large outbreaks, mass medication of drinking water with antibiotics (tetracycline) may be attempted but effectiveness is uncertain - it requires careful calculation of dose rates as the water intake is variable with some animals not drinking enough, and it carries the risk of disrupting rumen function and feed intake.
    - The prognosis is good without treatment, even in severe cases. However, correct treatment applied early may shorten the course of disease and prevent the permanent blindness and corneal scarring that occurs rarely and unpredictably.

Illthrift

- Malnutrition
    - Correct dietary deficiencies revealed by review of composition of diet and / or blood testing.
    - If underlying chronic infections or conditions such as Johne's disease, pneumonia, pyrrolizidine alkaloidosis, arthritis or intestinal adenocarcinoma are suspected, the prognosis is poor and the animal should be euthanased without delay or if fit to travel, sent for salvage slaughter (refer to section 4).
    - If responsive conditions such as early pneumonia, trace element/vitamin deficiency or internal parasitism are suspected, they should be treated with antibiotics, mineral and vitamin supplements or anthelmintics, respectively.
    - Salvage slaughter is an option if fit to travel and subject to consultation and acceptance by an abattoir.
    - Manage sheep being treated, separately from other animals if competition for food, water and shelter will impede recovery.
    - The prognosis is good to excellent for dietary deficiencies and internal parasitism.
- Shy feeders
    - Treatment with drugs is generally unsatisfactory.
    - Provide hay or chaff, (on the ground initially if necessary) in a quiet, less competitive feeding environment.
    - Do not isolate individual animals
    - The prognosis is good for animals returned to a grazing environment but may be poor for those remaining in the live export process.

Lameness

- Arthritis
    - Treatment is unlikely to be of benefit as most cases, once recognised, are longstanding with irreversible joint changes.
    - Salvage slaughter is an option for lame animals that can still move freely and are fit for the journey, subject to abattoir consultation and acceptance. Polyarthritic animals in light body condition are likely to be wholly condemned.
- Fractures and dislocations
    - Dislocated joints (ie hip, elbow, fetlock) require immediate intervention and expertise for successful reduction. Xylazine sedation or anaesthesia may be necessary to facilitate reductions.
    - Hobbling of hind legs to prevent the splits may be of benefit in weak animals but they must have a quiet temperament.
    - Limb bone fractures, longstanding limb dislocations (>24 hrs) and injuries causing extended recumbency (>24 hrs) demand euthanasia. The exception is fractured long bones in young animals that are still ambulatory - if splinted or preferably cast, and provided with pain relief (NSAID's) and nursing care the prognosis is fair.

- Foot abscess
    - Administer parenterally a maximal dose of procaine penicillin. Usually only a single shot is required for obvious recovery to commence, otherwise continue treatment until signs of commencement of recovery are evident (reduction in lameness and swelling).
    - With toe abscess, paring of the hoof to allow drainage of pus will prevent the need for further antibiotics. Heel abscess is difficult to treat successfully. It may not drain well when opened, requiring a longer course of antibiotics (procaine penicillin, oxytetracycline) to resolve infection.
    - Avoid dirty wet conditions under foot during the period of treatment
    - The prognosis is excellent except for heel abscess and if interdigital joint infection is prevented by early treatment.
- Footrot
    - Treatment with parenteral antibiotics (procaine penicillin, oxytetracycline) and dry underfoot conditions usually resolves even severe lameness after a few days without the need to pare away dead horn, and may eliminate infection. If antibiotics are injected, topical application of aerosol sprays such as cetrimide or oxytetracycline are unnecessary.
    - Footbathing in formalin or zinc sulphate (with surfactant) is an option however the cost, chemical hazards, need for paring and unpredictable results compared to injectable antibiotics make them unattractive.

- Avoid co-mingling with susceptible sheep or running on ground that susceptible sheep may contact within 14 days. Note that properties with footrot-affected sheep are quarantined in Western Australia and infected sheep may only be transported under permit to specified export feedlots (not saleyards or other properties).

- Prevent flystrike

- Laminitis

  - Place acute cases on soft flooring on an energy-restricted diet and move occasionally but not excessively.

  - Pain relief using non steroidal anti-inflammatory drugs (flunixin meglumine, ketoprofen) can be provided to severely lame animals to prevent permanent recumbency. Careful paring of overgrown horn may also help relieve pain.

  - The prognosis is excellent for animals able to stand.

  - Consider euthanasia or salvage slaughter if chronic or animals recumbent for >24hrs.

- Nutritional myopathy
  - Injections and oral drenches containing vitamin E and or selenium are available for treatment.
  - Handle and move animals carefully and slowly.
  - Provide easy access to feed and water in a confined area until mobility improves.
  - The prognosis is good for mildly affected animals but moderate to poor for others.

- Care must be taken when treating with selenium as the threshold for toxicity is low.

- Overgrown hooves
  - Reestablish the normal shape of the hoof by paring with secateurs to remove excess horn.

- Wounds (Lacerations)
  - Treat superficial wounds with a topical antibiotic spray or lotion.
  - Apply a pressure bandage if there is moderate to severe haemorrhage.
  - Principles of wound treatment are to apply lavage, debridement and where appropriate suturing and bandaging. This applies especially to large, deep, gaping and contaminated wounds if complications are to be avoided.
  - Apply debridement by cutting or scraping away with a scalpel blade any blue-black, leathery or obviously necrotic tissue and gross contamination.
  - Manage grossly contaminated wounds as open (unsutured) wounds using lavage, debridement and if on a limb, bandaging.
  - Apply lavage using sterile saline or clean mildly salty water squirted under moderate pressure with a 35mL syringe and 19g needle.
  - Suture wounds after lavage and debridement only if they are not grossly contaminated. Use tension relieving sutures if required and bandage if on a limb.

  - Apply bandages to limbs that are close fitting, snug, long, firm and thick so they are like a cast. This can be achieved using rolls of gauze, cotton wool and elastic adhesive bandages. The objectives of bandaging are to stop bleeding, immobilise the area, prevent further

trauma and contamination, keep the wound warm and prevent it drying out. Without bandaging, wound healing may be severely compromised.

- An inexpensive, easily applied waterproof conforming bandage suitable for emergency conditions can be made using rolls of plastic clingwrap, foam rubber and electrical or duct tape.

- Treat deep or penetrating wounds with a course of parenteral antibiotics (procaine penicillin, oxytetracycline, erythromycin, tylosin, ceftiofur).
- Administer non steroidal anti-inflammatories (flunixin meglumine, ketoprofen, meloxicam, tolfenamic acid) if animals are in pain.
- For the duration of recovery, provide clean, non-slip flooring in a non-competitive environment with easy access to food and water.

Skin condition

- Cancer (Squamous cell carcinoma)
  - No practical treatment for sheep is available.
  - The prognosis is poor – ulceration, flystrike, toxaemia, metastasis is inevitable
  - If severely affected (bleeding, necrotising bacterial infection, flystrike), euthanase without delay. Consignment for salvage slaughter is an option for mildly affected cases subject to being fit for the journey and consultation and acceptance by the destination abattoir or to knackeries.
- Flystrike (Cutaneous myiasis)
  - Cut away matted hair and wool, remove accessible maggots and apply insecticide or larvicide to kill remaining maggots.

    - Administer parenterally, broad spectrum antibiotics (procaine penicillin, oxytetracycline) to animals showing signs of toxaemia.
    - The prognosis is poor for animals showing signs of toxaemia such as dullness and reluctance to stand, eat or drink.
- Scabby mouth
    - No effective treatment is available – the disease must be allowed to run its course of 3 to 4 weeks.
    - Animals with secondary bacterial infections, especially of the feet, will benefit from parenterally administered antibiotics (procaine penicillin).
    - Avoid co-mingling with sheep that have not been fully immunised by vaccine or natural exposure.
    - For animals with severe muzzle lesions, provide ready access to soft feed and clean water to encourage eating and hasten recovery.
    - Prevent flystrike.
    - The prognosis is excellent for a full recovery in uncomplicated cases.

4. CONSIDERATIONS FOR EUTHANASIA AND OTHER MANAGEMENT OPTIONS FOR ANIMALS REJECTED AT PRE-EMBARKATION INSPECTIONS

4.1 Introduction

There are four options for dealing with animals rejected at pre-embarkation inspections. In this context, these are animals that are sick, injured, weak or distressed, and not because they are out of specification. The options are:

1. Euthanasia
2. Salvage slaughter (slaughtered at an abattoir or knackery for salvage value)
3. Treat
4. Monitor

This section provides information and checklists of key considerations to help decide which of these options is the best under different circumstances. It is important to preface this section by stating that the first and foremost consideration must always be whether the level of pain and distress being experienced by the animal is undue and warrants prompt euthanasia.

4.2 Deciding considerations

In practice, when immediate euthanasia to relieve pain and distress is not required, a decision to euthanase for other reasons, or to salvage slaughter, treat or monitor, is often clear cut - one or two considerations become deciding, overriding of all others. Below is a full checklist of considerations, some of which may be deciding, that may be used to aid decisions on management of reject animals.

- ☐ level of pain and distress of the animal
- ☐ ability to stand and walk
- ☐ likelihood of recovery with and without treatment

- ☐ likelihood of partial recovery, with or without treatment, to a state suitable for salvage slaughter
- ☐ likelihood of recovering to fulfill its intended purpose (ie milking, breeding)
- ☐ accuracy of diagnosis and the nature and stage of disease
- ☐ skill, time and facilities available to treat properly including at further stages along the export process
- ☐ length of drug withdrawal periods (are there antibiotic or chemical residues which exclude slaughter)
- ☐ value of the animal
- ☐ cost of treatment
- ☐ opportunity cost of treatment (is time, money and effort best expended elsewhere?)
- ☐ availability of slaughter for salvage and the salvage value
- ☐ the likelihood of being condemned if sent for slaughter for salvage value
- ☐ value of diagnostic information obtained from necropsy
- ☐ ability to withstand further handling including transport
- ☐ availability of sufficient time for recovery before discharge at destination
- ☐ likelihood of rejection by the importing country

- ☐ availability and amount of insurance payable for sick and dead animals

- ☐ risk to other animals and people

4.3 Considerations for euthanasia

The overriding primary deciding consideration for euthanasia is the welfare of the animal (level of pain and distress). The level of pain and distress warranting euthanasia is a matter of judgment taking into consideration changes in behaviour (activity, aggression, posture, response to handling, vocalisation) and clinical signs (demeanor, respiration rate, heart rate, weight loss, dehydration, urine production). When there is uncertainty, there are usually other considerations favouring toward or away from euthanasia to assist making a decision.

In the live export process, euthanasia is usually a clear-cut decision for non-ambulatory animals (unable to stand or walk). The ability of animals to walk and walk well is central to the functioning of the live export process. Animals unable to walk and keep up can cause costly disruptions and delays. Therefore, animals for euthanasia without undue delay include:

- non-ambulatory animals that have unresponsive toxic conditions or broken, dislocated or infected legs.
- animals with chronic debilitating conditions that can stand, but with difficulty, and have unsteady gaits and drag their hind feet. They would easily fall or be knocked over and have difficulty in accessing feed or water.

Life threatening illness or injury will also warrant euthanasia. The possible exception is valuable animals (providing that the animal's welfare is the primary consideration) that will receive intensive treatment and care.

Euthanasia is warranted if the cost of treatment is high relative to the value of the animal and the prognosis is poor. Even if the cost of treatment is low, euthanasia may be the best option for animals that

would otherwise have to be maintained for extended periods in assembly points, waiting for lengthy withholding periods for meat or milk, or export slaughter intervals, to expire.
Special mention must be made of *downers*. These are animals that have become recumbent, but have been treated and remained recumbent - their diagnosis and treatment is complex. As a general guideline, animals in sternal recumbency (sitting up), alert, eating, drinking, that attempt to rise when encouraged and have been down for less than 48 hours, should continue receiving treatment if conditions allow. Animals not fully matching these descriptors have a very poor prognosis and should be euthanased without delay.
Other considerations may exist favouring euthanasia of downers. The key ones are:

- time and resources to treat properly - downers require considerable nursing including soft bedding and good footing, regular rolling and lifting, and feeding and watering
- time available for full recovery of their ability to walk – this may take many weeks or months.

Checklist of key considerations for euthanasia some of which may be deciding

- ☐ Uncontrollable pain and distress
- ☐ Unable to stand or walk
- ☐ Uncertain accuracy of diagnosis and severe nature and late stage of disease
- ☐ High value of diagnostic information obtained from necropsy
- ☐ Poor prognosis with and without treatment
- ☐ Inadequacy of treatment facilities and staff resources
- ☐ High risk to staff and animal cohorts
- ☐ Inadequate time available for full recovery
- ☐ Unsuitable for salvage slaughter or salvage slaughter is unavailable

4.4 Considerations for salvage slaughter

Slaughter for salvage value may be considered for animals where:

- recovery is unlikely or incomplete
- treatment facilities are inadequate
- inadequate time is available for effective treatment and full recovery

It is an option when there is a nearby slaughter facility, suitable transport is available to that facility and the animal is fit for the journey. Strong consideration should be given to the animal's existing level of pain and distress and what might happen should the process not go according to plan. The animal should also be free of antibiotic and chemical residues and have a low likelihood of being condemned for disease. A veterinary opinion should be sought if the fitness of the animal for transport is in doubt.

Checklist of key considerations for salvage slaughter, some of which may be deciding

- ☐ A nearby slaughter facility exists
- ☐ Suitable transport is available
- ☐ The animal has been deemed fit for transport including by a veterinarian if necessary
- ☐ The animal can withstand further handling after transport
- ☐ Carcass condemnation for disease or residues is unlikely
- ☐ Drug and chemical withholding periods have expired

4.5 Considerations for treatment

Treatment refers to administration of medicine or some therapeutic compound, or surgery and also includes the application of nursing care. Nursing care is an important part of treatment – it refers to provision of separate or specialised care in a hospital pen or defined area including for example provision of shelter, bedding and good quality feed and water. The full cost of treatment must take into account nursing care - it is easily underestimated.

Treatment is an option when the value of the animal exceeds the full cost of treatment, the prognosis with treatment is good and the time to recovery fits with the stage of the export process that the animal is in. This is not always straightforward because there is always uncertainty about the diagnosis, the effectiveness of treatment, the full cost of treatment and the likelihood and time of full recovery. Other prominent considerations include things such as the time and resources available to treat, and whether the time and resources, if limited, might be better spent elsewhere.

A decision to treat is influenced considerably by estimates of the cost-effectiveness of treatment. A simple formula exists to help gauge cost-effectiveness of treatment. It should be used along with other considerations, the level of pain and distress always being primary.

The formula is C = V x P where C is cost of treatment, V is value of the animal and P is the probability of recovery with treatment. For example, if a steer with pneumonia is worth $1000 then spending up to, but not more than $1000 on treatment is cost-effective if it will make a full recovery. If the steer, based on clinical findings and experience, has a 30% chance of full recovery with treatment and therefore a 30% chance of resuming its value of $1000, then it is cost-effective to spend up to $300 (30% x $1000) on treatment. If the steer is not expected to make a full recovery but will receive salvage slaughter return of $300 after deducting costs, then it is still cost effective to spend up to $300 on treatment.

Making a prognosis[1]. This requires taking into account a range of uncertainties. There are uncertainties about accuracy of diagnosis, effectiveness of treatment, and time to and level of recovery. Making a prognosis in the live export process can sometimes be difficult because time, facilities and diagnostic back-up are often unavailable (but can sometimes be easier because of these constraints).

A prognosis can be made based on experience with previous cases, keeping in mind the wide variety of intrinsic animal factors and extrinsic management and environmental factors contributing to uncertainty of

[1] Prognosis means predicting the future course of the disease

outcome. In the live export process, rate of response to treatment is probably one of the most helpful methods of making a prognosis. Rapid improvements over a few hours or days in demeanor, appetite and mobility usually indicate ongoing treatment will be rewarded. Slow or absent improvement gives cause for favouring euthanasia or slaughter for salvage value.

Checklist of key considerations supporting treatment, some of which may be deciding

- ☐ Pain and distress are controllable
- ☐ The value of the animal is greater than the full cost of treatment including opportunity cost[2]
- ☐ There is a high likelihood of recovery with (or without) treatment
- ☐ There is a high likelihood of recovering to fulfill its intended purpose (ie milking, breeding)
- ☐ Risk of disease and injury to other animals and people is controllable
- ☐ Skill, time and facilities are available to treat properly (including at further stages along the export process if necessary)
- ☐ Sufficient time is available for recovery
- ☐ Diagnosis is accurate
- ☐ Sufficient time is available to meet withholding periods for meat, milk and export slaughter intervals
- ☐ The rate of response to treatment is encouraging

4.6 Considerations for monitoring

Monitoring is an option for animals with mild sickness or injury below the threshold of symptoms where intervention is considered necessary. It is also for cases where restraint for treatment including repeated treatments, may cause undesirable levels of stress. If the animal deteriorates or fails to improve then intervention of some sort should be considered.

[2] Opportunity cost of treatment is where time, money and effort are better spent elsewhere

Checklist of key considerations supporting monitoring, some of which may be deciding

- ☐ Pain and distress are below the threshold for intervention
- ☐ Resources are available for monitoring
- ☐ Treatment may do more harm than good in terms of stress on the animal
- ☐ Disease will not worsen or spread to other animals

5. RECOMMENDATIONS FOR MANAGEMENT OF REJECT ANIMALS PRIOR TO AND DURING ROAD TRANSPORT

5.1 Introduction

This section provides guidelines for the pre-transport management of animals rejected from the live export process at pre-embarkation inspections. Unit to load animals (rejects) are sick, injured, weak or physiologically unsuited for export by sea. The inspections occur at quarantine premises, which may be a feedlot or farm, or at the wharf. Depending on location, the animals may be euthanased, treated on site, or transported by road away from the inspection point for treatment or salvage slaughter.

5.2 Decision-making

Decisions on the fate of reject animals are made by the person-in-charge[3]. This is done after individual assessment and where necessary, after obtaining veterinary advice. Information to assist making decisions on euthanasia, salvage slaughter, treatment or monitoring of reject animals is provided in Section 4. It is recommended that a system of sorting rejects during inspection be developed at inspection points enabling euthanasia, urgent treatment or monitoring of rejects to be performed expeditiously.

5.3. Legislation and criteria for rejection

The criteria for rejection from transport by sea are more comprehensive than the criteria for rejection from transport by land. Therefore, animals rejected from export may still be fit for road transport. For example, an animal may be rejected from live export for scabby mouth, however the animal remains fit to travel by road.

The criteria for rejection of cattle and sheep from the export process are legislated and are provided in the Australian Standards for Export of Livestock. The criteria for rejection from land transport are provided in the Australian Animal Welfare Standards and Guidelines – Land

[3] The person who is responsible for the welfare of the livestock at the times they are in charge for each stage of each journey, including before loading and after unloading. Responsibility for duty of care for livestock welfare may extend to the person's employer.

transport of livestock[4]. They are, or soon will be, incorporated into each State and Territory's animal welfare legislation. The rejection criteria for export and for land transport are reproduced in Appendices 1 and 2, respectively, for reference.

5.4. Euthanasia

Euthanasia should be performed without delay on reject animals suffering undue pain and distress or where the options of salvage slaughter, treatment or monitoring are not available.

Euthanasia may need to occur on the transport vehicle. A rifle, captive bolt or veterinary-administered lethal injection should be used, the choice being dictated primarily by issues of safety for the operator, bystanders and animals. If a lethal injection is used, measures should be taken to ensure the carcase and its parts when disposed of are not consumed by animals.

The following approach is recommended:

- Handle animals for euthanasia quietly and calmly taking care to avoid inadvertently subjecting them to unnecessary distress, fear or pain.
- Only involve the minimum number of people required to carry out the procedure safely and effectively.
- Ask bystanders to leave and keep the procedure out of public view.
- Restrain as necessary for effective euthanasia to ensure that death comes painlessly and rapidly.
- Confirm death systematically every time, satisfying yourself beyond doubt that the animal is dead before disposing of it.

5.5 Pre-transport management

Many rejects will be transportable under routine arrangements. These are animals that are:

[4] Animal Health Australia (AHA) (2008). Australian Standards and Guidelines for the Welfare of Animals — Land Transport of Livestock. AHA, Canberra. Edition 1 2008, Version: 1; Part A4, Pre-transport selection of livestock. Available on the internet at http://www.animalhealthaustralia.com.au

- ambulatory
- not suffering conditions where transport will cause increased pain and distress
- otherwise assessed as fit for the intended journey.

These may include animals affected by conditions such as pinkeye, illthrift, bony or soft tissue swellings and various skin conditions.
Some rejects, however, must only be transported under veterinary advice. This is a legal obligation under the *Standards for Land Transport of Livestock*[1]. Animals for which veterinary advice must be obtained before transport include those that are:

- unable to walk unassisted and by bearing weight on all legs
- severely emaciated
- visibly dehydrated
- showing visible signs of severe injury or distress
- suffering from conditions that are likely to cause increased pain or distress during transport
- blind in both eyes

5.6 Veterinary advice

Veterinary advice may be obtained remotely – this may include by phone, fax or email. Often an AQIS Accredited Veterinarian is in attendance to complete inspection obligations to an importing country's health permit conditions. Animals may become injured after formal inspections have been completed and the veterinarian has departed.
The veterinarian should be provided with sufficient information to give sound advice on whether the animal should be euthanased or transported. A written record of the information provided and the advice given should be kept by the veterinarian and the person in charge.
In providing advice for the transport of compromised animals, the veterinarian would need the following information on **each animal**:

- ☐ the nature and extent of any injuries
- ☐ the ability to bear weight on all four legs
- ☐ the period of time off feed and water

- the extent of any blindness
- the stage of pregnancy
- the level of heat or cold stress

The veterinarian would also need information on the following **journey factors** (determining the likelihood of transport unduly aggravating the animal's compromised welfare:

- the journey time (ensuring the length of the journey does not exceed the fitness of the weakest animal on board)
- road conditions
- weather
- the resources available to protect the animal during transport
- the standard of treatment and care at destination

If the animals are intended for salvage slaughter, additional information would be needed on:

- the acceptability of the animal by the knackery or abattoir with regard to residues and likely disposition of the carcase, and
- the provisions for emergency slaughter including euthanasia on the transport vehicle if necessary

If transport is decided, the veterinarian may provide instructions on how the animals should be transported that may include provision of:

- gently sloping rather than steep loading and unloading ramps
- non-slip flooring
- soft bedding
- loading into separate compartments of transport vehicles
- transport in smaller specialised vehicles or trailers that are specifically reserved for sick and injured animals
- separation from other animals
- penning with one quiet animal
- penning with other animals compatible in size, strength and temperament

The veterinarian may require assurances that:

- ☐ the animals will not go to a saleyard to be traded or sold
- ☐ if the animals become unduly compromised during the journey they will be taken to the nearest suitable facility for treatment or euthanasia

The veterinarian may provide instructions for pre-transport treatment and care of compromised animals. These instructions may include:

- ☐ a period of rest and recovery so that the animal can walk up a ramp unassisted
- ☐ feeding and watering
- ☐ subcutaneous administration of calcium borogluconate/magnesium sulphate solutions
- ☐ analgesia
- ☐ sedation
- ☐ parenteral or topical antibiotics
- ☐ bandaging, splinting or hobbling
- ☐ rehydration by stomach tube (if a competent operator is available) with fluids containing isotonic or hypotonic concentrations of electrolytes
- ☐ guidance on how an animal may be assisted on and off a transport vehicle or trailer

APPENDIX 1: REJECTION CRITERIA FOR CATTLE AND SHEEP IN THE AUSTRALIAN STANDARDS FOR EXPORT OF LIVESTOCK - APPENDIX 3.1[5]

General requirement

- Fail to meet requirements of protocol/import permit, such as sex, type, breed, tag number
- Lactating animals with young at foot
- Lactating animals
- Pregnancy status not confirmed as appropriate for journey

Systemic conditions

- Emaciated or overfat
- Anorexia (inappetence)
- Uncoordinated, collapsed, weak
- Unwell, lethargic, dehydrated
- Ill-thrift

Musculoskeletal system

- Lameness footrot, foot abscess, arthritis, fractures etc, or abnormal gait
- Abnormal soft tissue or bony swellings

Gastrointestinal system

- Dysentery or profuse diarrhoea
- Bloat

Nervous system

- Nervous symptoms (head tilt, circling, incoordination)
- Abnormal or aggressive behaviour/intractable or violent

External/skin

- Generalised papillomatosis or generalised ringworm, dermatophilosis
- Generalised and extensive buffalo fly lesions
- Generalised skin disease

[5] Australian Standards for the Export of Livestock (Version 2.3) 2011. Available on the internet at http://www.daff.gov.au/animal-plant-health/welfare/export-trade/v2-1

- Visible external parasites
- Significant lacerations
- Discharging wounds or abscesses
- Cutaneous myiasis (flystrike)
- Balanitis (pizzle rot in sheep)
- Blood/discharge from reproductive tract (vulva/prepuce)

Head

- Blindness in one or both eyes
- Cancer eye
- Keratoconjunctivitis (pink eye)
- Excessive salivation
- Nasal discharge
- Coughing
- Respiratory distress — difficulty breathing
- Horns causing damage to head or eyes
- Bleeding horn stumps
- Scabby mouth

APPENDIX 2: REJECTION CRITERIA FOR LAND TRANSPORT OF CATTLE AND SHEEP IN THE AUSTRALIAN ANIMAL WELFARE STANDARDS AND GUIDELINES – LAND TRANSPORT OF LIVESTOCK[6]

SA4.1 Livestock must be assessed as fit for the intended journey at every loading. An animal is not fit for a journey if it is:

- unable to walk on its own by bearing weight on all legs
- severely emaciated
- visibly dehydrated
- showing visible signs of severe injury or distress
- suffering from conditions that are likely to cause increased pain or distress during transport
- blind in both eyes
- known to be, or visually assessed to be within 2 weeks of parturition, unless the water-deprivation time and journey is less than 4 hours duration to another property.

SA4.2 Any livestock assessed to be not fit for the intended journey must only be transported under veterinary advice.
SA4.3 The consignor must only supply livestock that are assessed as fit for the intended journey.
SA4.4 Where livestock are assessed to be not fit for the intended journey before loading, the person in charge must make effective arrangements for the care, appropriate treatment or humane destruction of weak, ill or injured livestock at the first opportunity.

[6] *Animal Health Australia (AHA) (2008). Australian Standards and Guidelines for the Welfare of Animals — Land Transport of Livestock. AHA, Canberra. Edition 1 2008, Version: 1; Part A4, Pre-transport selection of livestock. Available on the internet at http://www.animalhealthaustralia.com.au*