



Investigation into the reportable mortality level for sheep exported on a voyage from Fremantle to Oman September 2006.

1. Purpose

To report on the investigation into the cause of the mortalities for a consignment of sheep loaded on 30 September 2006 and unloaded in Oman on 14 October 2006.

To provide recommendations resulting from the investigation.

2. Executive Summary

There were 373 mortalities of the 17,999 sheep loaded which equates to a mortality rate of 2.07%. The vessel had 111,788 sheep loaded and had an overall mortality rate of 1.45% for the voyage.

The AQIS accredited veterinarian has reported the cause of deaths of the sheep were mainly due to diarrhoea. There is no record of any signs of diarrhoea in the sheep within the registered premises but diarrhoea was noticed after loading by the exporter's representative.

Another consignment loaded at Fremantle had a higher than average mortality rate (1.72%) but did not trigger the reportable level. The post mortem finding and clinical signs are consistent with salmonellosis.

Salmonellosis and inanition account for 75% of on board deaths for sheep exports to the Middle East.

3. Background

The reportable levels of mortalities for livestock on board vessels are defined in the Australian Standards for the Export of Livestock (ASEL). The reportable level in sheep is two per cent of the number loaded. AQIS receives an end of voyage report for each consignment and initiates an investigation if the mortality level is higher than the reportable level defined in the ASEL.

The consignment of sheep and the mortalities are as per table 1.

Table 1

	Loaded	Total mortality	Percent mortality
A Wethers	5281	91	1.72
B Wethers	4048	98	2.42
C Wethers	8670	184	2.12
Totals	17999	373	2.07

The vessel carried several consignments by different exporters, but only one consignment had a reportable mortality incident. This mortality investigation is restricted to the consignment of 17999 sheep exported by one exporter which did experience a reportable mortality level.

3.1 Sources of information

The following information was reviewed:

1. Documentation from the registered premises
2. Report from the exporter on the preparation of the consignment.

3. End of voyage report from the AQIS Accredited veterinarian on board the vessel
4. Notice of intention (NOI) and Consignment Risk management Plan (CRMP) documentation

4. Findings

4.1 Notice of Intention – Consignment risk management plan

The exporter submitted a Notice of Intention and consignment risk management plan which listed the relevant ASEL and importing country requirements. The route included on the NOI/CRMP form was: Fremantle, Muscat, Bahrain and Kuwait.

4.2 Registered Premises preparation of the sheep

The sheep were prepared in two registered premises for the voyage.

The arrivals at each feedlot were mixed with the carry over sheep. There were not a significant number of deaths in the registered premises during the preparation time. There was no report of disease in the registered premises and disease was not recorded at the time of inspection at the registered premises. The record of rejection does not include rejections for diarrhoea.

4.5 On Board

Diarrhoea and weakness was noticed in the B wethers once loaded. The stockman and AAV instigated chaff feeding and antibiotic treatment.

The main post mortem finding was enteritis consistent with salmonella. The daily death rate is included in the table below.

Date	Number of deaths
30 September	2
1 October	5
2 October	10
3 October	20
4 October	21
5 October	28
6 October	25
7 October	24
8 October	28
9 October	32
10 October	26
11 October	25
12 October	35
13 October	31
14 October	26
15 October	35
Total	373

The AAV attributed the death rate on the last two days to a combination of heat stress and diarrhoea. The unloading of the vessel was delayed at Muscat and the climatic conditions were not favourable.

5. Conclusions

- . The contributing causes of deaths for this consignment were enteritis (consistent with salmonellosis) and heat stress.

- . There was no detection of a problem with diarrhoea in the registered premises or during the AAV or AQIS inspection. Clinical disease became evident after loading on the vessel.
- . Heat stress contributed to the deaths on the final two days of the voyage.
- . Outbreaks of salmonellosis may not be evident at the time of export when sheep are held for a short time in a registered premise before export.

6. Recommendations:

1. The inspection process before permission to leave for loading must have sufficient rigor to detect diarrhoea in sheep.
2. That industry looks at procedures for managing salmonella outbreaks during a voyage.

Further information on salmonella / inanition can be found at Livecorp 112 R&D