



**Australian Government**

**Australian Quarantine and Inspection Service**

## **Investigation into the reportable cattle mortality level on sea voyage from Portland, Victoria to Shuwaikh, Kuwait, March/April 2009.**

### **1. Purpose**

To report on the investigation into the cause of mortalities in a consignment of cattle exported by sea to Kuwait, and to make recommendations with the objective of reducing the likelihood of a recurrence.

### **2. Summary**

Four consignments of livestock were loaded on the vessel.

There were 9 mortalities of the 500 cattle loaded as one consignment, which equates to a mortality rate of 1.8%. The majority of these mortalities were associated with complications around the time of calving.

There were no mortalities in the 7 cattle loaded in the second consignment of cattle.

There were 289 mortalities in the 53 306 sheep that were loaded in the third consignment, that equates to a mortality of 0.54 %.

There were 106 mortalities in the 25 106 sheep that were loaded in the fourth consignment, that equates to a mortality of 0.42 %.

This investigation is limited to the 9 mortalities in the 500 cattle loaded as one consignment.

### **3. Background**

The investigation into the mortality was carried out by reviewing the following information:

1. On-board veterinarian's End of Voyage Report;
2. On-board veterinarian's Daily Reports;
3. Report from the exporter;
4. Records from the registered premises;
5. Report from the master of the vessel;
6. Report from the AQIS certifying veterinarian;
7. Records from the AQIS Accredited Veterinarian (AAV) who prepared the animals; and
8. Report from the Australian Maritime Safety Authority (AMSA).

### **4. Findings**

#### **4.1 Reportable mortality level**

The reportable mortality level for a long haul cattle voyage is 1%, which for this voyage was reached on day 14, 10 April 2009.

**Table 1: Chronology of Events**

<b>Dates</b>	<b>Day of Voyage</b>	<b>Action</b>	<b>Cumulative Voyage Death Total</b>	<b>Cumulative % Deaths</b>
20/03/09	N/A	331 heifers, 197 cows and 3 bulls (531 head) entered registered premise		
23/03/09	N/A	15 heifers and 9 cows (24 head) entered registered premise		
26/03/09	N/A	3 bulls entered registered premise		
27/03/09	0	Loading of 500 cattle in Portland: 308 heifers; 186 cows; and 6 bulls	0	0
3/04/09	8	1 heifer mortality	1	0.2
5/04/09	9	1 cow mortality	2	0.4
6/04/09	10	1 cow mortality	3	0.6
9/04/2009	13	2 cow mortalities	5	1.0
10/04/09	14	2 cow mortalities	7	1.4
14/04/09	18	Arrival in Shuwaikh, Kuwait	7	1.4
16/04/09	20	2 cow mortalities; Unloading completed	9	1.8

#### **4.2 Registered Premises**

The cattle exported from Portland were delivered to the registered premises on 20 March (531 head), 23 March (24 head) and 26 March (3 bulls) and held until loading on 27 March. There were no mortalities over the preparation period.

The record of rejects from the registered premises indicates 52 head were rejected for being not pregnant or too advanced in pregnancy. Three cattle were rejected for lameness, one for a jaw abscess and one as not suitable for shipping.

#### **4.3 Loading**

One animal was rejected as a downer following transport to the port. The records from the exporter indicate that 500 cattle were loaded onto deck five of the vessel without incident.

#### 4.4 Journey

The climatic conditions for the cattle deck were as follows:

**Table 2: Climatic conditions:**

Date	Wet bulb (°C)	Humidity (%)	Daily water consumption
27/03/09	-	-	-
28/03/09	17	73	Ad lib
29/03/09	17	73	Ad lib
30/03/09	19	67	Ad lib
31/03/09	16	66	Ad lib
1/04/09	16	68	Ad lib
2/04/09	22	77	Ad lib
3/04/09	25	85	Ad lib
4/04/09	27	85	Ad lib
5/04/09	26	78	Ad lib
6/04/09	25	85	Ad lib
7/04/09	27	79	Ad lib
8/04/09	25	85	Ad lib
9/04/09	25	79	Ad lib
10/04/09	22	70	Ad lib
11/04/09	24	77	Ad lib
12/04/09	23	77	Ad lib
13/04/09	22	76	Ad lib
14/04/09	19	35	Ad lib
15/04/09	15	30	Ad lib
16/04/09	16	52	Ad lib

No data available for day one, 27 March, as the ship was loading in Portland. The on-board veterinarian's End of Voyage report indicated that around the equatorial region a few cases of heat stress occurred in the cattle. The veterinarian also noted that as the daily temperatures increased, the daily fodder intake was reduced and that this may have contributed to the mortality in the cattle.

##### 4.4.1 Feed

The records from the exporter indicate the amount of feed loaded was in excess of the Australian Standards for the Export of Livestock (ASEL).

The on-board veterinarian and stockman reported some of the chaff bags were of poor quality and that the cattle did not appear to eat from these. The poor quality chaff was discarded. The on-board stockman ceased feeding chaff to the heifers from 6 April but continued to provide suitable chaff to the cows.

A sample of chaff was returned to Australia for testing and nutritional analysis with inconclusive results.

##### 4.4.2 Calvings and Abortions

Sixteen cows and 4 heifers calved during the voyage; 1 calf was premature (and was euthanased), 3 were stillborn and 16 calves were born alive. Of these calves a further 7 were euthanased, leaving 9 viable calves discharged in Kuwait on 16 April 2009.

Three cows were recorded as aborting during the voyage. One of these cows was euthanased as it was unable to rise. Six of the 9 mortalities either calved or aborted during the voyage.

#### 4.4.3 Treatments administered

The treatment records of individual cattle were assessed as part the investigation. All of the cattle that died, apart from 1 cow (sudden death), received some form of treatment under veterinary supervision.

#### 4.4.4 Causes of Mortality

All of the mortalities that occurred were female cattle, including 1 heifer and 8 cows. The on-board veterinarian conducted post mortem investigations and determined the following causes of mortality. The term downer is used to describe cows that are recumbent and unable to rise without assistance, there are many disease processes that can cause cows to become recumbent.

**Table 3: Cause of mortality and relationship between mortalities and calving**

Type	Cause of mortality	Date of death	Date calved	Treatment given (Y/N)
heifer	Septicaemia secondary to severe enteritis	3/4/09	N/A	Y
cow	Sudden death/Intestinal torsion	5/4/09	3/4/09 Full term.	N
cow	Unknown	6/4/09	N/A	Y
cow	Euthanased (downer)	9/4/09	5/4/09 Full term.	Y
cow	Massive internal haemorrhage	9/4/09	6/4/09 Full term. Assistance required.	Y
cow	Septicaemia secondary to chronic uterine torsion	10/4/09	9/4/09 Still born.	Y
cow	Euthanased (downer)	10/4/09	N/A	Y
cow	Euthanased (downer)	16/4/09	14/4/09 Abortion	Y
cow	Euthanased (downer)	16/4/09	12/4/09 Still born. Assistance required.	Y

#### 4.4.5 Discharge of animals

Four hundred and ninety one adult cattle and 9 live-born calves (500 head total) were discharged at Shuwaikh, Kuwait on 16 April 2009.

#### 5. AMSA evaluation of the vessel upon return to Australia

The AMSA evaluation of this vessel concluded that the vessel did not appear to suffer any failure of the livestock services during the voyage.

#### 6. Other observations

The exporter provided a veterinary declaration that *the cattle were pregnancy tested and were not more than 190 days pregnant at the time of export*. Records provided to AQIS during the investigation indicated 7 cows were loaded that were 28 weeks pregnant at the time of export. Three of these cows died, or were euthanased, during the voyage.

## **7. Conclusion**

All mortalities occurred in heavily pregnant cattle (8 cows; 1 heifer). Complications around the time of calving appear to have played a significant role in at least 6 of the mortalities. Poor quality chaff provided to the cattle was also noted as was a reduction in feed intake associated with increasing ambient temperature. These two factors may have contributed to the mortality in the cattle. Location of stock on-board the vessel or weather conditions did not appear to play a significant role. In addition, inaccuracies in pregnancy diagnosis were noted given that 19 full term calves were born (16 live; 3 stillborn) during the voyage.

## **8. Recommendations/Follow up actions**

- a. Livestock Export Standards Advisory Group (LESAG) to consider whether the ASEL adequately addresses the risks for the export of pregnant cows and heifers.
- b. Additional conditions may be considered for future consignments of pregnant cattle prepared by the exporter.
- c. Industry to consider a program to enable the collection (and processing on return to Australia) of post mortem samples on each voyage to provide definitive information for the diagnosis in the event of a reportable mortality investigation or detection of an animal health issue.
- d. AQIS to write to the Livecorp technical working group to ask for their review of the current standards for the long-haul export of pregnant cattle with a view to preparing a paper for consideration by LESAG.
- e. AQIS to accept the exporter's decision to limit the maximum individual weight of pregnant cows to the Middle East to 600 kilograms.
- f. AQIS to accept the exporter's decision to pregnancy test all pregnant dairy cattle (where the method of purchase allows this) twice by a registered veterinarian who is a member of the Australian Cattle Veterinarians and an accredited tester under the National Cattle Pregnancy Diagnosis Scheme. The first pregnancy test being performed at an earlier stage of pregnancy (approx 9 to 12 weeks) and the final pregnancy test performed in the registered premise prior to export. The first pregnancy diagnosis results will be provided to the pregnancy tester at the time of the final test.
- g. AQIS to write to the AAV to determine how the accuracy of pregnancy testing might be improved for future consignments.

## **9. Results of similar voyages**

The exporter has regularly shipped similar consignments to Kuwait with no reportable incidents in the last five years. Between the voyage that is the subject of this investigation, and the completion of this report, no consignments similar to this voyage have been prepared by the exporter.