**Mortality Investigation Report 75 Buffalo exported by sea to Vietnam in August 2018**

**Summary**

On 22 August 2018, Frontier International Northern Pty Ltd (FIN) exported 1,653 slaughter cattle and 487 slaughter buffalo by sea to Vietnam. The voyage was completed in 12 days and completed discharge in Vietnam on 2 September 2018.

A mortality rate of 1.23 per cent (six head) was reported for the buffalo and 0.12 per cent (two head) for the cattle. The mortality rate for buffalo exceeds the reportable mortality level of 1 per cent for buffalo on voyages of more than ten days as prescribed by the *Australian Standards for the Export of Livestock* (ASEL). As the reportable level is in respect of a species, only the buffalo consignment is the subject of this report.

Of the six buffalo mortalities reported during the voyage, four died in their pens of pneumonia and two were euthanised due to showing signs of pneumonia and were recumbent and unable to rise (downers). FIN implemented a Buffalo Management Plan in October 2017 in response to a previous reportable mortality event (Report #70). FIN revised the original management plan to further address the risk factors associated with export of buffalo by sea. The revised plan includes further measures to mitigate the risk factors and address the outbreak of pneumonia.

**Information reviewed**

The department reviewed the mortalities by assessing the following information:

1. report from the exporter
2. daily reports, end of voyage report and additional information from the accredited stockperson who accompanied the consignment on board the vessel
3. load plans and feed dockets from the exporter
4. documents from the Australian Government Accredited Veterinarian (AAV) who prepared the consignment
5. report from the Master of the vessel
6. documents and information from the regional department veterinary officer (DVO)
7. records from the registered premises (RP)
8. department records from previous and subsequent voyages

**Background**

Exports of buffalo to Vietnam commenced in February 2014. Between the commencement of exports and this mortality event there were 53 consignments, carrying 18,388 buffalo.

There have been five reportable mortality events for buffalo prior to this incident exported by sea (Report #42 (October 2011), #57 (October 2014), #67 (November 2016), #70 (September 2017) and #71 (December 2017). None of these events occurred on the same vessel as this report.

Prior to this voyage, FIN had exported nine buffalo consignments of 1,685 animals. Over the nine consignments prior to this voyage, there have been a total of 13 buffalo mortalities with an average mortality rate of 0.77%. FIN have had one other reportable mortality recorded in buffalo exported by sea to Vietnam (report #70).

The department does not routinely require an AAV to be on board for feeder/slaughter buffalo exports to Vietnam. On voyages where there is no AAV on board, a LiveCorp accredited stock person is responsible for reporting to the department and works with the Master of the vessel and the crew to maintain the health and welfare of the livestock on board. The department did not require an AAV on board this voyage.

**Report Findings**

**The Livestock**

The consignment consisted of 487 slaughter buffalo averaging 445 kilograms. They buffalo were wild caught and were sourced from three properties in the Northern Territory and were mustered using motor vehicles and helicopters in the weeks before entering the RP. The buffalo were held on farm for an average of two weeks prior to entering the RP.

**Preparation in the registered premises**

The RP for this consignment is located in Adelaide River in the Northern Territory and is routinely used to prepare livestock including cattle and buffalo for export. The buffalo arrived at the RP between 27 July 2018 and 10 August 2018 and were held there until 22 August 2018. The buffalo were held in the RP for an average of 17 days before export. This is above the ASEL requirements for a minimum of 48 hours in a RP for long haul voyages (voyages of 10 days or more) with one port loading and one port discharge.

During this period, temperature ranged from 12.9 to 34.6 oC with humidity ranging from 11 to 99 per cent (Bureau of Meteorology, 2018). The DVO noted conditions in the RP were dusty. There were seven buffalo mortalities at the RP. Five were due to physical injury on arrival which were euthanised, and two died due to ill thrift (failure to eat).

The RP management noted the buffalo were reluctant to eat shipboard pellets. FIN assessed the buffalo’s reluctance to eat as common behaviour and staff regularly monitored the livestock while in the RP. To address this for the voyage, FIN loaded 25 additional tonnes of chaff on the vessel

ASEL standards were met for preparation of livestock at the RP. A total of 550 buffalo were examined by the AAV at the RP on 20 August 2018 and all were assessed as fit and healthy for export.

Five buffalo were rejected by the AAV and RP staff on 22 August 2018 prior to loading due to lameness or ill thrift. On 22 August 2018, 487 buffalo were treated by the AAV for parasites and were trucked to Darwin for loading. A total of 58 buffalo remained at the RP, to be exported on the next consignment to Vietnam.

**The vessel**

The vessel involved in this incident is a purpose built livestock carrier and is used for livestock export to a range of markets including China, Indonesia, Malaysia and Vietnam. There have been no reportable mortality events on this vessel prior to this voyage.

**Loading onto the vessel**

Loading was completed in 9.5 hours and was conducted in accordance with ASEL standards. No issues with loading were reported by the DVO or exporter.  There were no issues relating to weather or delays. 30 tonnes of sawdust and 25 tonnes of additional chaff was carried on board, which is above what is required for long-haul voyages by ASEL. ASEL stipulates that chaff is not required on board consignments loaded out of Darwin travelling to South East Asia.

**Conditions during the voyage**

The department reviewed the information provided by the onboard stockperson during the voyage. The stockperson reported the sea conditions were slight to very rough during the voyage, however did not state whether this affected the mortalities. The temperature ranged from 28 to 33°C and humidity fluctuated between 73 and 80 percent. The livestock consumed an average of 11.15 kilograms of feed per head per day and 50.10 litres of water per head per day.

The decks were reportedly dry throughout the journey, with no issues reported regarding the ventilation on the vessel. There were no issues with respiratory rate or signs of heat stress noted by the stockperson. However, the stockperson noted the space for the heavy buffalo (above 450kg) was not enough even though it met ASEL standards.

**Mortalities and treatments**

There were a total of six buffalo mortalities in the consignment of 487 buffalo, a final mortality rate of 1.23 per cent. The first mortality was recorded on day two. All six of the mortalities occurred during the voyage (not during loading or discharge) and were the result of pneumonia which was diagnosed as a result of post-mortem inspections completed by the stock person. Details of mortalities are presented in Table 1.

| Table 1: Information of buffalo mortality  |
| --- |
| **Date** | **Voyage Day** | **Number of mortalities** | **Cumulative Mortality** | **Cause of mortalities** |
| 23/08/2018 | 1 | 0 | 0 | N/A |
| 24/08/2018 | 2 | 1 | 1 | Pneumonia |
| 25/08/2018 | 3 | 2 | 3 | 2 x Pneumonia (1 euthanised) |
| 26/08/2018 | 4 | 0 | 3 | N/A |
| 27/08/2018 | 5 | 1 | 4 | Pneumonia |
| 28/08/2018 | 6 | 1 | 5 | Pneumonia |
| 29/08/2018 | 7 | 0 | 5 | N/A |
| 30/08/2018 | 8 | 1 | 6 | Pneumonia (euthanised) |
| 31/08/2018 | 9 | 0 | 6 | N/A |

Numerous treatments were undertaken during the voyage, predominately for respiratory issues, ill thrift and physical injuries. Due to the number of treatments provided to the livestock, the vessel ran out of Draxxin (the most effective antibiotic for respiratory issues) so the stockperson used Alamycin in its place. Details of treatments are presented in Table 2.

| Table 2: Information of voyage treatments for bufffalo  |
| --- |
| **Date** | **Voyage Day** | **Number of treatments** | **Reason for treatment** |
| 23/08/2018 | 1 | 0 |  |
| 24/08/2018 | 2 | 1 | Physical injuries |
| 25/08/2018 | 3 | 2 | Downers |
| 26/08/2018 | 4 | 1 | Respiratory issues |
| 27/08/2018 | 5 | 8 | Respiratory issues |
| 28/08/2018 | 6 | 1 | Lameness |
| 29/08/2018 | 7 | 4 | Respiratory issues |
| 30/08/2018 | 8 | 1 | Downer |
| 31/08/2018 | 9 | 0 |  |

**Exporter’s Actions**

FIN identified the cause of the mortalities as pneumonia. To address the risk of future outbreaks of pneumonia, FIN has implemented a revised Buffalo Management Plan for export by sea.

FIN consider a longer time in the RP with daily inspections in the four days prior to export, additional vaccinations and a stricter rejection criteria of buffalo will reduce the risk of future mortality events.

The revised plan includes the following to address pneumonia:

1. Buffalo will spend a minimum of eight clear days in the RP prior to loading.
2. Buffalo will be vaccinated against bovine respiratory disease at least seven days prior to export.
3. Stricter rejection criteria has been implemented for buffalo while in the RP (the entire cohort – a group of animals of the same type, property of origin and delivery date – will be removed from the consignment if more than 3 per cent meet the ASEL rejection criteria/commercial rejection criteria).
4. Any buffalo mortalities in that occur in the RP will be further investigated by the exporter to ensure there isn’t further issues and establish the cause of death.
5. Additional antibiotic treatments above ASEL requirements will be loaded.

The revised management plan also included the following measures to further mitigate the risk of future mortality events:

1. Additional bedding and chaff beyond ASEL requirements loaded on the vessel.
2. Heavy buffalo (above 450kg) will be allocated an additional 10% space on board the vessel.

FIN exported their next consignment of 500 buffalo to Vietnam in November 2018 on a different vessel. The buffalo were of a similar age and weight to those in the previous consignment. FIN prepared the consignment in accordance with their revised management plan. One buffalo mortality was recorded which is below the reportable of level. The cause of the mortality was reported as haemorrhagic enteritis.

**Australian Maritime and Safety Authority Evaluation of the Vessel**

The Australian Maritime Safety Authority (AMSA) conducted an investigation into the vessel because the overall voyage mortality level of all buffalo exported exceeded 1 per cent.

AMSA provided their investigation findings to the department on 19 November 2018. They verified that they checked all areas of compliance with Marine Order 43 including logbooks, reports and records on board relating to the voyage. There was no evidence that the vessel or master had failed to comply with MO43 at any time livestock were on board. They concluded that all livestock services were operating satisfactorily during the voyage with no apparent factors associated with Marine Order 43 that may have contributed to the high mortality rate.

**Conclusions**

The department’s review of all information indicates the buffalo were prepared and managed in accordance with ASEL. After review and analysis of the reports from the on board stockperson and exporter which detailed the symptoms and illnesses of the buffalo on board, the department confirmed the likely cause of the mortalities was pneumonia.

The department reviewed and analysed the revised management plan provided and required the exporter to make changes. The exporter revised the management plan and included changes such as implementing stricter rejection criteria as well as a vaccination program against bovine respiratory disease for buffalo. The department accepted the revised management plan implemented by the exporter and did not take any regulatory action against the exporter.

The department did not approved further buffalo consignments until the exporter had revised the buffalo management plan. Once the exporter had made the required changes to the revised plan and it was approved by the department, compliance with the revised buffalo management plan was placed as a condition on the exporter’s approved arrangement.

The department required an IO and an AAV on board and additional reporting to be undertaken on the next voyage carrying buffalo. The IO was asked by the department to assess the effectiveness of the buffalo management plan. Both the IO and the AAV reported the health and welfare of the buffalo was vastly better than the previous buffalo voyage, and no further issues were identified.

​

**Call 1800 900 090** [Make a general inquiry](http://www.agriculture.gov.au/general-inquiries)
[Report a biosecurity concern](http://www.agriculture.gov.au/pests-diseases-weeds/report)
[Contact the media team](http://www.agriculture.gov.au/about/media-centre)

**Last reviewed:**

25 Jan 2019