Australian Government
Department of Agriculture, Fisheries and Forestry

Calculating onboard feed and water provisions under ASEL

Live Animal Export Branch

1 Purpose

To provide guidance on how to calculate onboard feed and water provisions in accordance with the Australian Standards for the Export of Livestock (ASEL).

2 Scope

This policy applies to exporters sending livestock consignments by sea. It outlines the process for calculating onboard feed and water provisions in order to comply with the requirements set out in ASEL standard 5 (loading and onboard management requirements).

This policy should be read in conjunction with relevant export legislation and standards listed under related material.

3 Requirements

In accordance with ASEL standard 5.1.10, feed and water provisions must be appropriate for the species, class, weight and age of livestock, voyage length and expected weather conditions for a voyage.

As defined in ASEL, voyage means the period from the time the first animal is loaded onto the vessel (the first day of the voyage) until the time the last animal is unloaded at the final port of disembarkation. In calculating onboard provisions for a voyage, all loading and unloading days must be taken into account.

ASEL standard 5 includes specific minimum feed and water provisions by species for buffalo, cattle, goats and sheep. The standards require that livestock must have an allowance made for, and be provided with, the minimum feed and water allowance per head per day based on liveweight (or per head for water for sheep and goats).

Calculations must be based on liveweight after any applicable curfew factor has been applied.

In accordance with ASEL standard 5.1.17, consignments exported under an extended long-haul management plan must carry a minimum of 7 days of reserve feed and water, to be used in the event of delay.

For all other consignments, a minimum of:

a) 20% or 2 days of reserve feed, whichever is greater, must be loaded on the vessel for consignments of less than 15 days; or
b) 3 days of reserve feed must be loaded on the vessel for consignments of 15 days or greater.

Allowance may be made for fresh water produced on the vessel while at sea.

As per ASEL 5.1.15 reserve feed must only be used if a delay is experienced during the voyage. Where an exporter intends to feed at a rate greater than that required by ASEL, this must be taken into consideration when calculating feed requirements to ensure that the full reserve is available should there be a delay.

4 Instructions

Onboard feed and water provisions

Exporters must ensure that at least the minimum ASEL feed and water provisions are loaded or available for all livestock in the consignment, taking into account:

- provisions for each day of loading and unloading
- liveweight (after applying a curfew factor if applicable)
- the consignment's estimated voyage length. For guidance on how to calculate a consignment's voyage length as accurately as possible, exporters should refer to the Voyage length calculations under ASEL policy.

For loading and unloading days only, exporters may calculate daily feed and water provisions on a pro rata basis. Calculations must take into account the number of livestock that will be on board the vessel each day, and ASEL feed and water requirements.

For example, if unloading at the final port of discharge takes several days, and on commencement of the final unloading day only 30% of the total number of livestock loaded remain on board the vessel, the exporter's calculations for that day may include feed and water provisions for the remaining 30% of livestock only.

Note: Full reserve provisions must be carried in accordance with ASEL. There is no allowance for pro rata provision of reserve feed.

For each consignment, exporters must accurately calculate and load the correct onboard provisions prior to vessel departure, or in accordance with Loading feed at a second Australian port. Exporters must keep all records as evidence to demonstrate that their processes and procedures for calculating and loading onboard provisions are in accordance with this policy and ASEL.

Detailed examples on how to calculate feed and water provisions for various scenarios are outlined in Appendix A.

Loading feed at a second Australian port

Where an exporter intends to load feed at a second (or subsequent) Australian port that will contribute to the ASEL onboard feed provisions for the livestock loaded at the first port, the exporter must:

- ensure that detailed calculations include feed and water provisions for all legs of the voyage. This must include

  - calculations to address a situation where any reserve feed is used during the first leg of the voyage (between the first and second Australian port), and replacement reserve feed will need to be loaded.
  - calculations relating to feed loaded at any subsequent Australian port (such as a third or fourth port), if applicable.

- as a minimum, on departure from the first port, have adequate feed loaded as required by ASEL to cover the leg of the voyage until arrival at the second port, plus 20% or 2 days of reserve feed, whichever is greater, for consignments less than 15 days or 3 days reserve feed for consignments of 15 days or greater. To be used only in the event of delay.
  - In order to meet minimum ASEL requirements, the remaining feed for the entire voyage (including any additional reserve feed that may be required) must be loaded at the second (or subsequent) Australian port.
  - Reserve feed loaded at a first port can contribute towards total reserve feed provisions for the entire voyage, if it was not used.
- ensure the consignment's feed shortage contingency plan (as per ASEL standard 4.1.18)
  - addresses a situation where the scheduled loading of feed at the second port is unavailable for any reason. For example, the plan might outline an arrangement to source an alternative feed supply at the second port, or load feed at an alternative Australian port.
  - considers requirements for additional onboard provisions to account for any variation to the voyage length.

Multiple exporters on a voyage

For voyages with multiple exporters, onboard feed and water provisions must be calculated based on the consignment details for each exporter's Notice of Intention to export (NOI).

To facilitate the onboard management of provisions during a voyage, exporters must confirm their consignment's feed and water arrangements with the master of the vessel (or representative) prior to departure. This includes verifying the allocation of any stored feed or water remaining on board from a previous voyage, and arrangements relating to feed and water reserves.

Multiple ports of discharge

For voyages with multiple ports of discharge, feed and water provisions may take into account livestock numbers on board the vessel for each leg of the voyage.

5 Verification

Prior to issuing a consignment's export permit and health certificate, a regional veterinary officer may verify that ASEL requirements relating to onboard provisions have been met.

Where required by the department, an exporter must make available documents that demonstrate compliance with ASEL. This may include supporting documentation to verify calculations, in accordance with ASEL and this policy.

6 Related material

- Australian Standards for the Export of Livestock (ASEL)

- Export Control Act 2020
- Export Control (Animals) Rules 2021
- Policy for Loading foreign sourced fodder onto a vessel carrying Australian livestock
- Policy for Voyage length calculations under ASEL
- Policy for Voyage reporting requirements under ASEL
- Regulating live animal exports
- TRACE

Appendix A: Examples on how to calculate onboard feed and water provisions

Note: These are examples only. In these examples, cattle are non-pregnant and non-productive heifers, and sheep have more than 4 permanent incisor teeth

The calculations for feed and water provisions in these examples are for full loading and unloading days, with all animals in the consignment on board. Exporters are required to calculate onboard provisions relevant to their own consignment, including pro rata calculations for days of loading and unloading where relevant.

Calculations for each consignment must also take into account chaff and/or hay provisions in accordance with ASEL.

Example	**Scenario**	**Minimum Estimated voyage length, livestock numbers and weights, and reserve feed and water considerations**	**Calculations for provisions** Note: MT = metric tonne (1000 kg)	**Outcome/requirements**
Single port loading and single port discharge (includes a curfew factor example)	Portland to Russia • 3 day loading, commencing 16/01/2020 • 31 days at sea • 5 day discharge, estimated to be completed 23/02/2020	• Estimated voyage length = 39.13 days including full loading and discharge days • 7 days reserve feed and water required • 12,000 cattle, average weight 400 kg (minimum daily feed allowance of 2.0% of liveweight) [For curfewed* livestock – 12,000 cattle, average weight 400 kg +5% curfew factor = 420 kg (minimum daily feed allowance of 2.0% of liveweight)] **held off feed and/or water for more than 12 hours at the registered establishment prior to transport to the port of embarkation.*	• Feed: 12,000 head x 400 kg x 0.02 x 46.13 days = 4,428 MT • Water: 12,000 head x 400 kg x 0.12 x 46.13 days = 26,571 MT [For curfewed livestock: • Feed: 12,000 head x 420 kg x 0.02 x 46.13 days = 4,650 MT • Water: 12,000 head x 420 kg x 0.12 x 46.13 days = 27,899 MT]	From these calculations, in accordance with ASEL, this NOI: • For feed, would have a minimum requirement of 4,428 MT • For water, would have a minimum requirement of 26,571 MT (or ability for the vessel to produce on average 679 MT of fresh water per day while at sea). [For curfewed livestock, in accordance with ASEL, this NOI: • For feed, would have a minimum requirement of 4,650 MT • For water, would have a minimum requirement of 27,899 MT (or ability for the vessel to produce on average 713 MT of fresh water per day while at sea)].
Multiple exporters	Brisbane to Japan • 1 day loading, commencing 10/01/2020 • 15 days at sea • 1 day discharge, estimated to be completed 26/01/2020	• Estimated voyage length = 17.45 days including full loading and discharge days. • 3 days reserve feed and water required • Exporter #1 – 900 cattle, average weight 450 kg (minimum daily feed allowance of 2.0% of liveweight) • Exporter #2 – 420 cattle, average weight 375 kg (minimum daily feed allowance of 2.0% of liveweight)	Exporter #1 • Feed: 900 head x 450 kg x 0.02 x 20.45 days = 166 MT • Water: 900 head x 450 kg x 0.12 x 20.45 days = 994 MT Exporter #2 • Feed: 420 head x 375 kg x 0.02 x 20.45 days = 64 MT • Water: 420 head x 375 kg x 0.12 x 20.45 days = 387 MT	From these calculations, in accordance with ASEL, the NOI: For exporter #1: • For feed, would have a minimum requirement of 166 MT • For water, would have a minimum requirement of 994 MT (or ability for the vessel to produce on average 57 MT of fresh water per day while at sea). For exporter #2: • For feed, would have a minimum requirement of 64 MT

				• For water, would have a minimum requirement of 387 MT (or ability for the vessel to produce on average 22 MT of fresh water per day while at sea).
Multi-port loading (2 NOIs)	Portland to Fremantle to Russia (additional feed loaded at Fremantle) • 3 day loading, commencing 30/04/2020 • 3 days at sea • 1 day loading (Fremantle) 06/05/2020 • 28 days at sea • 5 day discharge, estimated to be completed 08/06/2020	NOI #1 (load port Portland) – cattle only • Estimated voyage length = 40.24 days including full loading and discharge days, and one day loading at Fremantle). • 7 days reserve feed and water required • 12,000 cattle, average weight 400 kg (minimum daily feed allowance of 2.0% of liveweight) NOI #2 (load port Fremantle) – cattle and sheep • Estimated voyage length = 34.00 days including full loading and discharge days. • 7 days reserve feed and water required • 5,000 cattle, average weight 400 kg (minimum daily feed allowance of 2.0% of liveweight) • 8,500 sheep, average weight 45 kg (minimum daily feed allowance of 2.0% of liveweight)	NOI #1 • Feed: 1st leg (Portland to Fremantle, 6.24 days voyage plus 3 days reserve feed to Fremantle): 12,000 head x 400 kg x 0.02 x 9.24 days = 887 MT • Feed: 2nd leg (Fremantle to Russia, 34.00 days voyage plus 7 days reserve feed): 12,000 head x 400 kg x 0.02 x 41.00 days = 3,936 MT • Water, entire voyage (40.24 days voyage plus 7 days reserve water): 12,000 head x 400 kg x 0.12 x 47.24 days = 27,210 MT NOI #2 (cattle) • Feed: 5,000 head x 400 kg x 0.02 x 41.00 days = 1,640 MT • Water: 5,000 head x 400 kg x 0.12 x 41.00 days = 9,840 MT NOI #2 (sheep) • Feed: 8,500 head x 45 kg x 0.02 x 41.00 days = 314 MT • Water: 8,500 head x 6 L x 41 days = 2,091 MT	From these calculations, in accordance with ASEL, NOI #1: • For feed, would have a minimum requirement of 887 MT loaded at Portland (for the 1st leg) • For feed, would have a minimum requirement of 3,936 MT loaded at Fremantle (for the 2nd leg) Note: if the 3 day reserve feed (288 MT) was not consumed during the 1st leg, this amount may be deducted from the calculations for the 2nd leg, making the 2nd leg minimum requirement 3,648 MT. • For water, would have a minimum requirement of 27,210 MT (or ability for the vessel to produce on average 676 MT of fresh water per day while at sea). From these calculations, in accordance with ASEL, NOI #2: • For cattle feed, would have a minimum requirement of 1,640 MT • For sheep feed, would have a minimum requirement of 314 MT • For water (cattle and sheep), would have a minimum requirement of 11,931 MT (or ability for the vessel to produce on average 351 MT of fresh water per day while at sea).

Multi-port discharging	Broome to Indonesia to Malaysia • 2 day loading, commencing 19/02/2020 • 4 days at sea • 3 day discharge (Indonesia), estimated to be completed 27/02/2020 • 2 days at sea • 3 day discharge (Malaysia), estimated to be completed 03/03/2020	Indonesia bound cattle – Broome to Indonesia • Estimated voyage length = 9.23 days including full loading and discharge days. • a) 20% or 2 days of reserve feed, whichever is greater, must be loaded onto the vessel. • 7,900 cattle, average weight 475 kg (minimum daily feed allowance of 2.0% of liveweight) Malaysia bound cattle – Broome to Malaysia • Estimated voyage length = 14.00 days including full loading and discharge days, and three days at Indonesia port • a) 20% or 2 days of reserve feed, whichever is greater, must be loaded onto the vessel. • 1,800 cattle, average weight 425 kg (minimum daily feed allowance of 2.0% of liveweight)	For Broome to Indonesia cattle: 2 day scenario: • Feed: 7,900 head x 475 kg x 0.02 x 11.23 days = 843 MT. 20% scenario: • Feed: 7,900 head x 475 kg x 0.02 x 9.23 days = 693 MT x 20% = 139 MT. 693+139= 832 MT • Water: 7,900 head x 475 kg x 0.12 x 12.23 days = 5,507 MT For Broome to Malaysia cattle: 2 day scenario: • Feed: 1,800 head x 475 kg x 0.02 x 16 days = 274 MT. 20% scenario: • Feed: 1,800 head x 475 kg x 0.02 x 14 days = 239 MT x 20% = 48 MT. 239 + 48= 287 MT • Water: 1,800 head x 425 kg x 0.12 x 17.00 days = 1,561 MT – days 1-12 (Broome to Indonesia) = 1,102 MT	From these calculations, in accordance with ASEL, this NOI: • For feed, would have a total minimum requirement of 1,117 MT (2 day scenario) or 1,119 MT for 20% (this calculation is based on minimum feed requirements for livestock on board) • For water, would have a total minimum requirement of 7,068 MT – or ability for the vessel to produce fresh water while at sea, at an average daily rate of: – Broome to Indonesia leg (days 1-12): 5,507 MT + 1,102 MT = 6,609 MT (or 551 MT per day) – Indonesia to Malaysia leg (days 13-17): 459 MT (or 92 MT per day).

			– days 13-17 (Indonesia to Malaysia) = 459 MT	

Version control

Version	Date of issue	Author	Reason for change
1.0	October 2020	Live Animal Export Branch	First publication
2.0	June 2023	Live Animal Export Branch	Updates to department branding and document formatting Update to water calculations for sheep, to align with ASEL
3.0	March 2024	Live Animal Export Branch	Updates to ASEL regarding reserve fodder requirements for short haul voyages.

Acknowledgement of Country

We acknowledge the Traditional Custodians of Australia and their continuing connection to land and sea, waters, environment and community. We pay our respects to the Traditional Custodians of the lands we live and work on, their culture, and their Elders past and present.