



8 September 2023

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Dr Mark Schipp
Chief Veterinary Officer
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RE: ASEL RATION INADEQUATE FOR DAIRY HEIFERS

Dear Dr Schipp,

VALE has recently checked ASEL requirements for cattle fodder: ASEL v 3.2 (3.4.1). The specified food provision of 2.5% bodyweight is inadequate for acceptable energy and protein requirements of Holstein dairy heifers of the weight often exported (eg 7-10 months old, 200-290kg).

Shipboard rations are 9-10 MJ/kg ME and <12% crude protein (CP) on a dry matter (DM) basis (Willis 2011). Shipboard pellets have roughly 90% DM (Willis 2011) so 2.5% bodyweight 'as fed' is equivalent to 2.25% bodyweight DM. If any of the ration is chaff, then the ration will be even lower in CP and energy.

Using a Dairy Australia calculator,¹ or referring to scientific papers (eg James 2011) it is evident <12% CP is inadequate for any dairy heifer <250kg long term. However, and of more importance regarding appetite and consequently hunger, the specified 2.5% bodyweight/day minimum is also insufficient for energy requirements for maintenance + growth.

250 kg heifer

Recommendations for a dairy heifer to grow at 0.8 kg/d (necessary to reach joining weight)², by James (2011) in black font and [Dairy Australia Heifer Calculator \(2023\) in blue font](#):

- 13.1% CP DM ([15% CP DM](#))
- 59.9 MJ/day ([59 MJ/day](#))

Shipboard rations (if <12% CP and 9.5 MJ/kg DM) at 2.5% bodyweight 'as fed' (2.25% DM) provide:

- <12% CP DM
- 53.4 MJ/day

¹ See <https://www.dairyaustralia.com.au/animal-management-and-milk-quality/fertility/growing-heifers-well/heifers-on-target-calculator> Accessed July 2023

² Dairy heifers in Victoria likely have average daily gain of 0.5 kg/d but 0.8 kg/d used to enable comparisons between the two references.

200kg heifer

For a dairy heifer to grow at 0.8 kg/d (necessary to reach joining weight), recommendations by James (2011) in black font and [Dairy Australia Heifer Calculator \(2023\)](#) in blue font:

- 14.2% CP DM (17% CP DM)
- 49.8 MJ/day (50.36 MJ/day)

Shipboard rations (if 12% CP and 9.5 MJ/kg DM) at 2.5% bodyweight 'as fed' (2.25% DM) provide:

- <12% CP DM
- 42.8 MJ/day

These calculations are for maintenance and growth requirements in terrestrial environments. Growth at 0.8kg/day, or at any rate, is presumably not a requirement of the voyage, but if not supplying for growth, these growing animals will be hungry. In addition, on land, animals do not have contend with shipboard stresses such as limited space allowance, competition for inadequate trough space, ship movement and heat or cold stress. James (2011) specifically notes that: "*Nutrient levels in the diet must be adjusted according to environment and the ability of the animal to withstand heat and cold stress.*" Willis (2011) estimated that 15% more food was required for "*live export stress factors*".

It is evident that ASEL recommendations are inadequate nutritionally and will not ensure freedom from hunger for this class of cattle. Voyages leaving Australia with Holstein heifers do not have enough fodder loaded to meet ad libitum (ad lib) feeding. Whilst ad lib feeding is not a requirement of ASEL v 3.2, ASEL 5.1.11 states that "*All livestock must be provided with adequate trough space during the voyage to ensure each animal can meet its daily requirements for feed and water without risk to their health or welfare.*" Not only is the mandated amount of food inadequate to meet daily requirements but trough space is invariably at a premium (especially for narrow deep pens), resulting in difficult trough access for the animals at the back of the pen. It follows that if well-acclimatised dairy heifers are not provided with close to ad lib food there is never enough trough space to enable all heifers to meet their daily requirements without risk to their health or welfare. Hunger and intense food competition in dairy heifers reportedly cause most of the severe lower leg and trample injuries.

Dairy heifers for China are in pre-export quarantine for at least 30 days and are well adjusted to pelleted ration. Shipboard personnel confirm that they all eat >2.5% bodyweight from Day 1 of the voyage if provided with ad lib feeding. One reason that food rationing occurs toward voyage-end for dairy cattle consignments is that the fodder calculation (number of animals x2.5% bodyweight) underestimates the actual amount of food required for adequate nutrition let alone ad lib feeding. Fodder is exhausted with ad lib feeding by the end of the voyage regardless of whether voyage length and fodder are calculated correctly or not. Experienced stockpersons and veterinarians often institute rationing much earlier in order to ensure that the food supplies are not exhausted. **ASEL's inadequate food provision for this class of animals is thus a very serious animal welfare issue:** inadequate food to satisfy hunger (welfare issue 1) and its quite visible adverse health and welfare sequelae over and above hunger, namely injuries (welfare issue 2).

In 2011, an industry recommendation was made to modify the ASEL wording of "minimum 2.5% bodyweight" to >2.5% (Willis 2011 p17). This recommendation was ignored. By VALE's calculations, fodder provided at <3% bodyweight is likely to result in hunger and food competition in dairy heifers. VALE recommends changing ASEL 3.4.1 as it is currently incompatible with ASEL 5.1.11. and is also incompatible with basic nutritional requirements for some classes of cattle. As a matter of urgency, **the minimum fodder requirement for dairy heifers (or any cattle) on all voyages (but particularly long-haul voyages) must be increased to a minimum of 3%.** Without this regulation, hunger, food competition injuries and fodder rationing will occur even if cattle weights are correct and estimated

voyage length is correct (not the case for 63% of voyages to a single port between 1 November 2020 to 31 December 2022).³

It is deeply concerning that both the exporters and the Department of Agriculture ignored the industry's own recommendations for increased cattle fodder in ASEL made in 2011 (Willis). It is also concerning that the Department has ignored the issue of cattle injuries resulting from the hunger and food competition. As such, VALE has taken the rare step of contacting you directly. It is simply not acceptable that cattle hunger is routine when following the Australian standards.

Yours sincerely

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REFERENCE

James RE. Replacement Management in Cattle. Growth Standards and Nutrient Requirements. In: *Encyclopedia of Dairy Sciences*, Fuquay JW (Ed), Second Edition, Elsevier Ltd, 2011, <https://doi.org/10.1016/B978-0-12-374407-4.00443-X>.
Willis G. Review of fodder quality and quantity in the livestock export trade. Project code: W.LIV.0256. Meat & Livestock Australia Limited. 2011

³ See: June 2023 Australian Standards for Export of Livestock (ASEL) Update 3.3 Reserve fodder requirements