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OVERVIEW OF GOOD AND BEST PRACTICES

SHEEP



ANIMAL TRANSPORT GUIDES

Report submitted by the Transport Guides consortium,
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Executive Summary

The objective of this report is to provide an overview from the 'grey' and scientific literature of good and best practices for animal welfare during transport. For the purpose of this report we define Good practices as procedures and processes that ensure compliance with requirements of legislation or regulations designed to protect the animals' welfare. Best Practices are defined as providing additional guidance on how procedures and operations can be improved to exceed any legally defined minimum welfare requirements. The report presents an analyses of the collected information for each of five species: cattle, horses, pigs, sheep and poultry. Each species chapter (or 'sub-report') comprises of an analyses of the practices identified, followed by an overview of all available practices presented in tabulated form. Both the analytical text and overview tables are structured according to the relevant chapters and articles in the Regulation. The report concludes with a presentation on two specific areas of interest: the costs associated with fitness-to-travel decisions, and a brief state of the art section on satellite navigation systems. A list of the references that were identified can be found at the end of the report. The findings in the report will be used to develop Guides to Good and Best Practices in the next steps of the project.

What the data on all species have in common is that the majority of recommendations is freely available online, and directly accessible to a large international audience. However, there is hardly any information on the level of impact each of the recommendations or publications has.

The available guidelines relating to means of transport are often generic, and apply to all species. There is general consensus in terms of vehicle design, particularly in relation to ventilation, but there is a lack of detailed information on how to operate these systems (perhaps with the exception of pig transport vehicles). Another aspect which is rarely described in all species is the design and use of drinkers on board vehicles for long journeys.

There is not a lot of information available on good and best practices regarding emergency situations and driving skills. There is also a lack of specific advice on long

journeys and the associated rest stops. Only limited recommendations are available on documentation to be carried on board, and on contingency plans.

Sheep

There are a limited number of information sources specifically addressing transport of sheep. In most of the documents found, the guidelines explain minimum legal requirements (good practices).

No guidelines related to fitness for transport of sheep were found.

Practices related to the means of transport sometimes go beyond the legal requirements, and include specific recommendations for different categories of animals.

There is a significant amount of information relating to the loading and handling of sheep, addressing several different aspects of the loading process including the behavioural responses of the animals.

Regarding space allowances, most of the sources identified present the information contained in the regulation in a simpler and more understandable form, but do not include any clear guides to best practices.

There are no clear recommendations for good or best practice in the area of feed and water provision.

Specific guidelines for sea transport are provided in the literature.

Economic aspects of fitness to travel

Transport of unfit animals must be discouraged. To reduce the incidence of unfit animals being transported it is important that they can be identified before loading on to the vehicle. It is essential to have alternative management options to deal with these animals. There is still a lack of guidelines for determination of fitness for travel for sheep and poultry.

If unfit cull animals can be treated medically, the benefit/cost ratio can be positive. Euthanasia and emergency killing do not provide financial benefits, but only generate costs, which are partly mitigated by subsidies. Non-compliance creates short term benefits, if the chance of getting caught is low, but will compromise the profitability of farmers and transport companies if enforcement is sufficiently high.

Satellite navigation systems

Regulation EC 1/2005 requires satellite navigation systems (SNS) to monitor travel and resting times. Suitable systems have been described in the literature, but there is no evidence of a systematic use by competent authorities nor transport organizers of these systems.

SHEEP

1. Sheep: Key points of interest

We examined a number of information sources related to good and best practices for the transport of sheep. References are presented in paragraph 4.2 of this report. Key points of interest regarding the references themselves, as well as the various aspects of the legislation, are discussed below.

References

1. We identified 22 documents with recommendations regarding specifically the transport of sheep. The number of documents is lower than for some of the other species studied in this report, e.g. pigs, cattle and poultry. When compared to other species with more information available it is clear that this cannot be attributable to the number of animals of each species, as according to the FAOSTAT (2014) there are 185 millions of pigs, 122 millions of cattle and 130 million of sheep in Europe. However, it is clear that sheep transportation has received less attention than transport of pigs and cattle and as a consequence relatively fewer recommendations for good or best practice have been produced.
2. The majority of the documents are about good practices (i.e. how to meet the legal requirements) or summarise ways to explain to different stakeholders the minimum legal requirements. There is only a small number of recommendations for best practices for sheep transport and some of these are derived from more general recommendations for all livestock and are not related specifically to sheep.
3. There are 8 documents which have been written on behalf of local authorities aimed at transporters in their country: Australia (refs 154, 179 and 175), Romania (refs 178 and ref 177), New Zealand (ref 162) and Spain (ref 182). All these documents cover several species, but include practices applicable for sheep.
4. The 9 governmental documents generally propose practices that interpret the legislation, or represent 'Good Practices'.
5. There are 4 documents produced by operators (refs 110, 181, 096 and 183) addressing questions related with loading facilities and practices, fitness to

transport and legal requirements in the scope of good practices, although specially ref 181 give some suggestions in terms of best practices.

6. We only identified one publication written by NGOs (ref 138), addressing specific questions in a manual that combines general aspects of handling and some ideas on transport of sheep. However, another document (ref 176) combined the participation of an NGO with veterinaries and competent authorities.
7. Two publications from quality assurance programmes were included in the present report (refs 143 and 144 both from the UK).
8. Finally, four documents were produced by research institutes or universities (refs 189, 096, 180 and 100). In these documents best practices (as opposed to 'good' practices) for sheep transportation can be found.
9. Formats of available information differ dependent upon the nature of the target audience. In the absence of critical analysis of impact it is not possible to determine the efficacy of different methods of presentation or media employed. The documents consist mainly of text, tables, and pictures.
10. Almost all documents are available on the internet, which makes them accessible to a wide number of stakeholders worldwide.
11. At this time, we do not have any information on the level of use nor the impact of the documents identified.

CONCLUSIONS: Few documents or information sources specifically address transport of sheep (although sheep transport is addressed in general recommendations for other species). In most of the cases the guidelines explain minimum legal requirements. The recommended practices identified are freely available online, but their level of use by the sector is unknown.

Fitness to travel

12. General recommendations about what makes an animal fit to travel are given in different documents (refs 189, 138, 096 and 174). For instance, it is suggested that animals with severe open wounds or with presence of a prolapse must not be loaded. For transport to the slaughterhouse, specific advice is also provided on the UK website LivestockWelfare.com (ref 110). Fitness conditions which require the delay of animal transportation or euthanasia of animals are provided in an

Australian guide (ref 175). In addition, information can be found on how to define “90% of gestation” in each species, including ewes (ref 176).

13. Other recommendations (ref 177) include advice on moving animals which need help, how to deal with open wounds or prolapses, females in late pregnancy, females who have given birth in the previous week, new-born lambs/kids with their umbilical cord still present, lambs less than 1 week of age are considered with general recommendations. It is also recommended in the same sources that lactating females not accompanied by their offspring should be milked at 12 hours interval.

CONCLUSIONS: The documentation found and assessed takes into account good practices related to minimum legal requirements. We did not identify any best practices related to fitness for transport for sheep.

Means of transport

14. General recommendations are provided in ref 177, including issues related to the construction and design of partitions and the need for a navigation system to be present in all vehicles.
15. Ref 96 states that the vehicle must be cleaned before and after transportation.
16. Ref 176 advises to check that legs of lambs are not trapped in the truck structures.
17. In terms of ‘best’ practices, ref 143 presents rules and assessment procedures, including the requirement to have a number of spot inspections carried out each year.
18. The Australian ref 175 demands vehicle certification and considers ramp angles.
19. Means of transportation by species and categories are presented in refs 96 and 183.

CONCLUSIONS: Some practices which can be considered to go beyond the legal requirements can be found on means of transport, including specific recommendations for different categories of animals.

Loading & handling

20. In terms of good practices for loading, general recommendations on gates, ramps, floors and decks are given in several documents (refs 164, 147, 96, 149 and 183).

It is suggested that loading/unloading ramps should have a maximum 50% inclination.

21. Good practices for handling are also provided in a number of sources (refs 138, 177, 164 and 147). For example, it is said that guidance tools including sticks must only be used as an extension of the arm to guide, persuade and encourage livestock. Stock-handling competency is addressed specifically as well (ref 175). Specific advice on how to perform loading and unloading is given in refs 189 and 182.
22. Ref 181 stresses the importance of preparation before loading the animals and the use of check-lists based upon risk analysis under different scenarios.
23. Other points addressed are related to the reaction of the animals to a new or novel environment, previous experience of loading/unloading, unloading at night, etc. (ref 181).
24. The social behaviour of sheep, their angle of vision, their capacity to distinguish shadow areas from real discordances on the floor, olfactory and auditory senses, etc. must be taken into account accordingly (refs 189, 182 and 181).

CONCLUSIONS: There is a significant amount of information relating to the loading and handling of sheep, addressing several different aspects of the loading process including the behavioural responses of the animals.

Space allowances

25. In terms of good practices, a number of documents present the information specified in the Regulations (refs 096, 176, 177, 143, 183, 164 and 144). For example, it is said that animals must have sufficient headroom to provide natural ventilation.
26. One reference adds that appropriate space allowance depends on weather, road quality, driving conditions, vehicle type and construction, animal species and category and rules are presented for separating animals by species and categories (ref 177).
27. Regarding best practices, there is limited advice although there are some considerations regarding different space allowances in relation to the travel duration (refs 182 and 189), or in relation to the presence or absence of wool (ref 181).

CONCLUSIONS: Most of the sources identified attempt to present the information contained in the regulation in a simpler and more understandable form to ensure they are more accessible to different stakeholders, but do not contain any clear guides to best practices.

Water and feeding

28. There are a few documents that refer to water and feed (refs 182, 175, 177, and 154). They all provide general comments, recommending to attention to the 'specific needs' of the animals, and only one (ref 177) provides a specific figure for that recommendation: the daily water consumption of adult ewes is 20 litres / day and this should be provided.
29. None of these sources provide clear guidance on best practices.

CONCLUSIONS: There are no clear recommendations for good or best practice in this area. The only quantitative recommendation is for the provision of water to meet the specified daily requirement of 20 litres/day for ewes.

Managing of air flow and temperature

30. In order to comply with the Regulation, general recommendations are provided in refs 164 and 161. For example, to improve air flow and temperature within the container it is recommended that fans should be installed at one end of the vehicle container and inlet apertures should be located at the other end to enhance natural airflow within the container.
31. Recommendations regarding the ventilation and humidity in vehicles, the need to reduce heat stress by good ventilation and transporting the animals during cold periods of the day or/and reduce animal density are also presented to in ref 177.
32. Other sources describe the use and operation of vehicle ventilation and methods to control temperature during transport. For example practical guidance is presented in ref 96.
33. No 'best practices' were found.

CONCLUSIONS: Only good practices providing advice on how to comply with the Regulation were found for this specific point.

Journey times and resting periods

34. Several documents present the legislation for journey times (refs 177, 179, 138) as described in the Regulations.
35. One reference (177) advises to rest the animals for 24 h after reaching the destination.
36. No best practices have been found for journey times and resting periods.

CONCLUSIONS: Only good practices ensuring compliance with the Regulation were found for this specific point.

Provisions for very long journeys

37. In terms of good practices, special conditions for long journeys: roof and floor construction and bedding, feeding and feeds, separation of animals, ventilation are given in ref 177.
38. Ref 181 proposes best practices based on a risk analysis and how to manage situations related to long journeys.
39. In relation to sea transport general guidelines are presented in ref 189, and feeding and watering suggestions are given by ref 162.
40. In relation to feeding it is recommended that an extra 25% or 3 days rations must be loaded, as a safety margin. Feed should be available within 12 hours of the sheep leaving the feedlot; the diet should be the same or similar to that in the feedlot conditioning. Feed-through space should be a minimum of 5 cm/head (ref 162).
41. During sea transport water should be available within 12 h of leaving the feedlot. The amount should be sufficient for the voyage length plus 3 days for contingencies. Sea water must not be offered to sheep as drinking water, at any dilution. Water should be offered *ad libitum* and must be available for a minimum of 2 h, twice a day. At least 4 l per head per day must be available and space trough space minimum of 2cm/head (ref 162)

CONCLUSIONS: Best practices include a risk analysis on the different factors to consider on very long journeys. Specific guidelines for sea transport are provided in the literature.

2. Sheep: Overview table

Fitness for transport

| Legislation (Regulation 1/2005) | Suggested good practice (improvement of compliance with the legislation) | Suggested best practice (upgraded standards) |
|---|--|--|
| <p>No animal shall be transported unless it is fit for the intended journey. Animals that are injured or that present physiological weaknesses or pathological processes shall not be considered fit for transport and in particular if:</p> <ul style="list-style-type: none"> • they are pregnant females for whom 90 % or more of the expected gestation period has already passed, or females who have given birth in the previous week; • they are lambs of less than one week | <p>(Refs 153, 189) General recommendations. For example, paying attention to very young or very old animals, very thin or very fat animals, pregnant females and mothers with offspring</p> <p>(Ref 031) Transport with special provisions direct to slaughter rules.</p> <p>(Ref 023) Conditions for the delay of transportation and euthanasia of animals.</p> <p>(Refs 114, 176) A table stating how much days of gestation are 90% for different species, including ewes</p> <p>(Ref 027) Animals not moving without help, open wounds or prolapse, pregnant females for whom 90 % or more of the expected gestation period has already passed, or females who have given birth in the previous week, new-born lambs/kids with their umbilical cord still present, lambs less than 1 week of age</p> <p>(Refs 025, 027) Lactating females not accompanied by their offspring should be milked at 12 hours interval</p> <p>(Ref 138) General view about animals fit to be transported</p> <p>(Refs 174, 001) Practical description of animals fit to be transported</p> | |

Means of transport

| Legislation (Regulation 1/2005) | Suggested good practice (improvement of compliance with the legislation) | Suggested best practice (upgraded standards) |
|---|---|---|
| <p>The means of transport are designed, constructed, maintained and operated so as to avoid injury and suffering and ensure the safety of the animals</p> | <p>(Ref 114) Check that legs of lambs are not trapped in the truck structures</p> <p>(Refs 027, 025) Recommendations according to the Regulation</p> <p>(Ref 025) Navigation system should be present in all vehicles</p> | <p>(Ref 143) Haulage operators certification, rules and assessment procedures</p> <p>(Ref 023) Vehicles certification, ramps angles</p> |

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| | (Ref 096) All requirements according to Regulation with practical considerations. For instance, vehicle must be equipped with a satellite navigation system which is able to record and transmit travel information in real time to the competent authorities (Refs 001, 174) Cleaning the vehicle before and after transport | (Ref 034) Type of means of transportation by species and categories |
|--|--|---|

Loading

| Legislation (Regulation 1/2005) | Suggested good practice (improvement of compliance with the legislation) | Suggested best practice (upgraded standards) |
|---|---|---|
| The loading and unloading facilities are adequately designed, constructed, maintained and operated so as to avoid injury and suffering and ensure the safety of the animals | (Refs 002, 164) General recommendations on gates, ramps, floors, decks. (Refs 027, 001, 034) Loading/unloading ramps should have maximum 50% inclination | (Ref 103) Preparation before loading the animals and check different points based on a risk analysis under different scenarios. Such as impossibility to find the place for loading, difficulties to access the area, absence of a proper loading area, non-homogeneous groups, animals with reluctance to move, pregnant ewes, loading at night, very young animals. (Ref 153, 046) Recommendations for a good load. For example, it is said that loading and unloading ramps must be adjustable to the height of the different floors of the truck. It is important that the slope of the ramp does not exceed 25% inclination |

Unloading

| Legislation (Regulation 1/2005) | Suggested good practice (improvement of compliance with the legislation) | Suggested best practice (upgraded standards) |
|---|--|---|
| The loading and unloading facilities are adequately designed, constructed, maintained and operated so as to avoid injury and suffering and ensure the safety of the animals | (Refs 093, 023) General recommendations on gates, ramps, floors, decks. It is suggested that the floor of multi-deck vehicles should be constructed and maintained in a way that prevents the soiling of livestock on lower decks. | (Ref 103, 153, 046) Based on a risk analysis under different scenarios try to make recommendations for instance in relation to the reaction of the animals in a new environment, times before being unloaded, unloading at night (Refs 002, 164, 147) Key points to take into account, including unloading of animals with problems. |

Handling

| Legislation (Regulation 1/2005) | Suggested good practice (improvement of compliance with the legislation) | Suggested best practice (upgraded standards) |
|---|---|--|
| The personnel handling animals are trained or competent as appropriate for this purpose and carry out their tasks without using violence or | General recommendations (Refs 147, 093). For instance, sheeps must not be caught by the fleece alone, nor lifted or dragged by the fleece, limbs, ears or tail, nor roughly handled by the horns. | (Ref 103) Behaviour of animals |

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|--|---|--|
| any method likely to cause unnecessary fear, injury or suffering | (Ref 023) Stock-handling competency (Ref 027) General recommendations (Ref 096) Practical recommendations for manipulation | (Ref 153) Behaviour of animals, systems to move the animals without producing pain. (Ref 106) Behaviour of animals (Ref 143) Key factors when moving animals |
| The personnel handling animals are trained or competent as appropriate for this purpose and carry out their tasks without using violence or any method likely to cause unnecessary fear, injury or suffering | (Ref 122) Sheep are sociable animals with good eyesight, a relatively subtle and undemonstrative behaviour and a tendency to “flock together”, especially when they are agitated. They should be handled calmly and their tendency to follow each other should be exploited when they are being moved. Crowding of sheep may lead to damaging aggressive and submissive behaviours as animals try to maintain personal space. It should be avoided to single sheep out of attention or to leave an animal alone, since they may become agitated and will strive to rejoin the group. | |

Other issues

| Legislation (Regulation 1/2005) | Suggested good practice (improvement of compliance with the legislation) | Suggested best practice (upgraded standards) |
|--|---|--|
| | | (Ref 103) Based on a risk analysis what to do under different scenarios, such as difficult traffic conditions, extreme temperatures. Consequences on meat quality and performance of a bad transport. (Refs 153, 046) Good driving and how to do in case of accident (Refs 046, 106) Negative effects of transportation on meat quality and fasting periods (Ref 106) What to measure to assess welfare during transport (Ref 106) Safety of the transporter (Ref 027) Short description of the main particularities of the sheep species: group animals, they are always attentive, broad visual field, good hearing, frightened of loud noises, docile, cannot stand isolation, easy to manipulate, except for rams that could become aggressive (Ref 096) Conditions for environment protection (Ref 100) Practical tool to assess long and short distance transport |

Space allowances

| Legislation (Regulation 1/2005) | Suggested good practice (improvement of compliance with the legislation) | Suggested best practice (upgraded standards) |
|--|---|--|
| Space allowances shall at least comply with the figures laid down, in respect of the animals and the means of transport referred to, in Chapter VII. Specific Tables are provided. | (Refs 114, 143, 144, 002, 147) The same tables are reproduced in several documents (Ref 046) Space allowance depends on weather, road quality, driving conditions, vehicle type and construction, animal species and category (Ref 046) Rules for separating animals by species and categories (Ref 096) Tables with space allowance by categories (Refs 001, 174, 034) Table with space allowances by categories | (Ref 153) Space allowances in relation to duration of the travel (Ref 103) Space allowance in relation to the presence or not of wool |

Watering and feeding

| Legislation (Regulation 1/2005) | Suggested good practice (improvement of compliance with the legislation) | Suggested best practice (upgraded standards) |
|--|---|--|
| <p>During transport, animals shall be offered water, feed and the opportunity to rest as appropriate to their species and age, at suitable intervals and in particular as referred to in Chapter V. If not otherwise specified, Mammals and Birds shall be fed at least every 24 hours and watered at least every 12 hours. The water and feed shall be of good quality and presented to the animals in a way which minimises contamination. Due regard shall be paid to the need of animals to become accustomed to the mode of feeding and watering.</p> <p>Unweaned lambs which are still on a milk diet must, after nine hours of travel, be given a rest period of at least one hour sufficient in particular for them to be given liquid and if necessary fed. After this rest period, they may be transported for a further nine hours;</p> <p>All other animals must, after 14 hours of travel, be given a rest period of at least one hour sufficient for them in particular to be given liquid and if necessary fed. After this rest period, they may be transported for a further 14 hours.</p> <p>After the journey time laid down, animals must be unloaded, fed and watered and be rested for at least 24 hours.</p> | <p>(Ref 106) General needs, such as explaining why water is important for animals in terms of homeostasis</p> <p>(Ref 093) General recommendations, such as give resting times to the animals during long transportation.</p> <p>(Refs 023, 027) All recommendations based on legislation. For instance, If sheep over four months old have been off water for 48 hours, the person in charge must ensure the sheep have a spell for 36 hours before starting another journey.</p> <p>(Refs 096, 034) Daily water consumption of 20 liters/day for adult ewes</p> | |

Managing air flow and temperatures

| Legislation (Regulation 1/2005) | Suggested good practice (improvement of compliance with the legislation) | Suggested best practice (upgraded standards) |
|---|---|---|
| Sufficient ventilation shall be provided to ensure that the needs of the animals are fully met taking into account in particular the number and type of the animals to be transported and the expected weather conditions during the journey. | <p>(Ref 002, 164) General recommendations (not very helpful). It is suggested that ventilation must be capable of keeping livestock in appropriate conditions, taking into consideration the length of journey and weather conditions. It is also infer in that ventilation should be capable of being adjusted, or stocking densities reduced as required.</p> <p>(Ref 058) General recommendations (not very helpful and in Romanian)</p> <p>(Ref 027) General recommendations regarding the ventilation and humidity in vehicles. Reducing heat stress by good ventilation, transport during cold periods of the day, reduce animal density. Body temperature of adult sheep should be max 39.4 °C.</p> <p>(Ref 096) Ventilation and assuring temperature during transport with practical guides</p> | (Ref 079) Transporting sheep in warm weather and how to avoid heat stress |

Journey time

| Legislation (Regulation 1/2005) | Suggested good practice (improvement of compliance with the legislation) | Suggested best practice (upgraded standards) |
|---|---|--|
| <p>Unweaned lambs which are still on a milk diet must, after nine hours of travel, be given a rest period of at least one hour sufficient in particular for them to be given liquid and if necessary fed. After this rest period, they may be transported for a further nine hours;</p> <p>All other animals must, after 14 hours of travel, be given a rest period of at least one hour sufficient for them in particular to be given liquid and if necessary fed. After this rest period, they may be transported for a further 14 hours.</p> <p>After the journey time laid down, animals must be unloaded, fed and watered and be rested for at least 24 hours.</p> | <p>(Ref 179) General standards for the land transport of sheep, table with hours per category is given e.g. for sheep over 4 months old being transported (without water) from 48 h a resting period of 36h is needed, for sheep under 4 months old being transported 28 h (without water), a resting period of 12h is needed and for ewes of more than 14 weeks old (excluding the last two weeks) being transported 24h (without water)a resting period of 12h is needed.</p> <p>(Ref 025) General recommendations according to the Regulation</p> <p>(Ref 138) General talk view about time of the journey</p> | |

Resting periods

| Legislation (Regulation 1/2005) | Suggested good practice (improvement of compliance with the legislation) | Suggested best practice (upgraded standards) |
|---|--|--|
| <p>Unweaned lambs which are still on a milk diet must, after nine hours of travel, be given a rest period of at least one hour sufficient in particular for them to be given liquid and if necessary fed. After this rest period, they may be transported for a further nine hours;</p> <p>All other animals must, after 14 hours of travel, be given a rest period of at least one hour sufficient for them in particular to be given liquid and if necessary fed. After this rest period, they may be transported for a further 14 hours.</p> <p>After the journey time laid down, animals must be unloaded, fed and watered and be rested for at least 24 hours.</p> | (Ref 027) Resting for 24h after reaching the destination | |

Provisions for long journeys

| Legislation (Regulation 1/2005) | Suggested good practice (improvement of compliance with the legislation) | Suggested best practice (upgraded standards) |
|---------------------------------|--|---|
| | (Ref 025) Special conditions for long journeys: roof, floor and bedding, feeding and feeds, separation of animals, ventilation | (Ref 103) Based on a risk analysis how to manage specific situations, such as long journeys |

Sea transport

| Legislation (Regulation 1/2005) | Suggested good practice (improvement of compliance with the legislation) | Suggested best practice (upgraded standards) |
|---------------------------------|--|--|
| | | <p>(Ref 153) Specific point to take into account during sea transport (?)</p> <p>(Ref 162) Feeding:</p> <ul style="list-style-type: none"> • recommended diets for the animals; • an extra 25% or 3 days rations must be loaded, as a safety margin; • feed should be available within 12 hours of the sheep leaving the feedlot; • the diet should be the same or similar to that in the feedlot conditioning; • feed trough space should be a minimum of 5 cm/head. |

| | | |
|--|--|---|
| | | <p>Watering:</p> <ul style="list-style-type: none">• available within 12 h of leaving the feedlot;• capacity for the voyage length plus 3 days for contingencies;• sea water must not be offered to sheep as drinking water, at any dilution;• water should be offered <i>ad libitum</i> and must be available for a minimum of 2 h, twice a day;• at least 4 l per head per day must be available;• trough space minimum of 2cm/head. |
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