



Fitness for transport of small ruminants



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Introduction

Transport can lead to distress, injury or even death if not properly planned and executed. Sheep and goats are sociable, gregarious animals and should be moved in groups. Many risks to animal welfare can be mitigated by providing appropriate facilities and equipment for handling and transportation (also with regard to current weather conditions). Further, adequate training and supervision of the business operators, handlers and drivers can contribute to minimising welfare problems. Ensuring that only fit animals are loaded is the most important aspect of maintaining welfare throughout transportation. The most serious welfare consequences associated with transport occur in (male) lambs and kids from the dairy production as well as cull breeding stock. Sheep have a tendency to not show signs of discomfort, which is why assessment of sheep fitness for transport is particularly challenging. For further information on the concept of fitness for transport, please refer to the **Thematic factsheet 'Fitness for transport'**.



Legal requirements

Council Regulation (EC) No 1/2005 of 22 December 2004 specifies the protection of animals during transport.

'No animal shall be transported unless it is fit for the intended journey [...].'

(Annex I, Chapter I, 1.)

'Animals that are injured or that present physiological weaknesses or pathological processes shall not be considered fit for transport [...].'

(Annex I, Chapter I, 2.)

'However, sick or injured animals may be considered fit for transport if they are: (a) slightly injured or ill and transport would not cause additional suffering; in cases of doubt, veterinary advice shall be sought; [...].'

(Annex I, Chapter I, 3.)

'When animals fall ill or are injured during transport, they shall be separated from the others and receive first-aid treatment [...] be given appropriate veterinary treatment and if necessary undergo emergency slaughter or killing [...].'

(Annex I, Chapter I, 4.)

'Lactating females of bovine, ovine and caprine species not accompanied by their offspring shall be milked at intervals of not more than 12 hours.'

(Annex I, Chapter I, 6.)



Method

Before livestock are loaded for transportation, their fitness for the intended journey needs to be verified. The inspection should include a thorough assessment of animal-based health and welfare measures. This will reduce the risk of animals suffering from welfare problems or not surviving the journey. Animal-based measures as well as farm recordings shall relate to:

- Injury
- Physiological weakness
- Pathological process

For all cases where there is doubt regarding the animal's fitness for transport veterinarian advice shall be sought.

Physiological weakness

Animals that present a physiological weakness shall not be considered fit for transport unless transport would not cause additional suffering. The following section describes bodily states related to physiological weakness that render animals unfit for transport.

Physiological weakness	Description of animal-based indicator	Outcomes rendering animals unfit for transport
Body condition	An animal in a poor body condition is likely to be more susceptible to the stressors of transport, which is why extremely thin animals are not be considered fit for transport.	BCS < 2.0 on a scale of 1 to 5: Sheep: during palpation bony spinous dorsal processes are sharp and prominent and can be easily felt, no fat cover over loin, loin muscle very shallow, transverse processes sharp and easy to pass fingers underneath them; Goats: spine clearly visible, deep depression between each vertebra, short ribs form a continuous shelf, no fat and little muscle between top of spine and short ribs, ribs clearly visible, sternum cartilage can easily be felt
Unable to move independently without pain or to walk unassisted	If in standing, an animal's weight is not distributed equally on all four limbs, as indicated by repeated weight shifting between legs or permanent resting of one limb, or reluctance to bear weight while walking is observed, it is highly unlikely that an animal is able to move without pain and thus unfit for transportation.	Sheep: Lameness score ¹ ≥ 2 on a scale of 0 to 6: Shortening of stride, head nodding/flicking, unable to bear weight on affected limb, may walk on knees, recumbency, reluctance to stand or move; Goats: Lameness score ² ≥ 3 on a scale of 1 to 5: Limping, unable to bear weight on all four legs, may walk on knees or with limbs stretched and not bending joints
Exhaustion	An animal showing signs of severe fatigue or exhaustion is not fit for transport.	Reluctance to move or stand, strained breathing, high drive to rest in recumbent position
Non-ambulatory	An animal is considered non-ambulatory when it cannot rise or is unable to stand unaided, but is still alive. An animal presenting such a condition is unfit for transport.	The animal is unable to rise or stand unaided

¹Kaler, J., Wassink, G. J., & Green, L. E. (2009). The inter- and intra-observer reliability of a locomotion scoring scale for sheep. *The Veterinary Journal*, 180(2), 189–194. <https://doi.org/10.1016/j.tvjl.2007.12.028>

²National Farm Animal Care Council. (2022). Code of Practice for the Care and Handling of Goats (p. 142). National Farm Animal Care Council. https://www.nfacc.ca/pdfs/codes/goat/Goat%20Code%202022_Final.pdf



Physiological weakness

Physiological weakness continued	Description of animal-based indicator	Outcomes rendering animals unfit for transport
Gestation status	Females for whom 90 % or more of the expected gestation period has already passed, or females who have given birth in the previous week.	In the last 15 days of pregnancy as calculated by date of breeding and the first week post partum, respectively
Newborn	In general, lambs of less than one week of age, unless they are transported less than 100 km, are not fit for transport. Furthermore, lambs and kids in which the navel has not completely healed (i.e. scarring of the umbilical wound) must not be transported.	Umbilical stump attached, or scab on the umbilical wound visible; Date of Birth within past 7 days

Pathological process

Animals that present a pathological process shall not be considered fit for transport unless they are only slightly injured/ill and transport would not cause additional suffering. The following section describes conditions related to a pathological process that renders animals unfit for transport.

Pathological process	Description of animal-based indicator	Outcomes rendering animals unfit for transport
Swelling	Animals showing an abnormal bodily protuberance or localised swelling which is causing pain are not to be considered fit for transport.	Enlargement of body part causing pain, e.g. abscess, hernia
Prolapse	Prolapse refers to the protrusion of an organ that results in an animal no longer being fit for transport.	Any prolapse (colon, vagina, uterus)
Impaired vision	Blind animals appear disoriented, frightened, stressed and are not fit for transport.	Blind in both eyes
Diarrhoea	Profuse diarrhoea with a severe disruption of the general condition and a high risk of dehydration rendering animals unfit for transport.	Loose, watery faeces, excessive faecal staining of hindquarters, dehydration
Discharge	Evident purulent discharge is a sign of acute inflammation that results in animals unfit for transport. In such cases an animal's fitness for slaughter is questionable.	Evident purulent discharge of eyes, nose, or vulva
Respiratory disorder	Animals with signs of laboured or difficult breathing, often in association with evidence of general distress such as extended neck are unfit for transportation.	Pneumonia, increased breathing frequency, laboured breathing, panting, open-mouth breathing, coughing
Bloated rumen	Animals that are bloated to the extent that they exhibit signs of discomfort or weakness are not fit for transport.	Bloated rumen
Aberrant behaviour	A generalised nervous system disorder resulting in aberrant behaviour or dangerous behaviour renders animals unfit for transportation.	Disorientation, forced movements, aggressive behaviour
Malposition of legs	(Congenital) deformity of the legs, or severely overgrown hooves present a high risk for injury and are likely associated with pain, rendering animals unfit for transport.	Lameness score (see above), weight not equally distributed on all four limbs
Joint alteration	Arthritis is a painful condition that leaves animals unfit for transport.	Lameness score (see above), weight not equally distributed on all four limbs;
Retained placenta	Not fully expelled afterbirth indicates that the animal is within less than 1 week post partum or long-term metritic disorder.	Visible placenta
Udder alterations	Clinical mastitis (acute inflammation of the mammary gland), engorged or gangrenous udder are painful conditions resulting in animals unfit for transportation.	Udder becomes swollen, red, and painful, affected animals look tired, lose weight, have an increased body temperature;

Pathological process

Pathological process continued	Description of animal-based indicator	Outcomes rendering animals unfit for transport
Hypo-/Hyperthermia	Animals with a body temperature outside of physiological boundaries are unfit for transportation.	<p>Fever: in sheep rectal temperature > 39,6 °C; in goats rectal temperature > 41 °C</p> <p>Hypothermia: rectal temperature < 37 °C</p>
Umbilical inflammation	Inflammation of the umbilicus in newborn or young lambs/kids leaves the animal unfit for transportation. Navel ill in sheep often leads to hepatic necrobacillosis (at 10–14 days) or septic peritonitis (within five days of birth), both conditions being fatal. In goats navel ill typically presents as 'joint ill', where several joints will swell and become hot and painful.	<p>Sheep: dull, depressed, poor condition and weak, arched back, head lowered;</p> <p>Goats: joints swollen, hot, and painful</p>

Recommendation for inspection

- Each animal's fitness for transport must be assessed prior to loading
- Pain assessment (see Annex) may be used to support decision making on an animal's fitness for transport in connection with painful conditions (e.g. wounds, swelling, bloated rumen, joint and udder alterations, umbilical inflammation)
- If there is doubt about an animal's fitness for transport, veterinary advice shall always be sought

Annex

Assessment of pain

Assessing the total pain score may be used to support decision making on an animal's fitness for transport in connection with painful conditions (e.g. wounds, swelling, bloated rumen, joint and udder alterations, umbilical inflammation). Following, pain assessment schemes utilising grimace scales for sheep and goats are provided. If animals show obvious signs of pain they may not be fit for transport.

Sheep pain facial expression scale

For a description of the sheep pain facial expression scale see McLennan et al. (2016).

Table 1: Assessment of the total pain score in sheep using the sheep pain facial expression scale (McLennan et al., 2016). Animals showing obvious signs of pain may not be fit for transport.

Deviations in facial areas	Score
Orbital tightening	Not present <input type="checkbox"/> (0)
	Partially present <input type="checkbox"/> (1)
	Present <input type="checkbox"/> (2)
Cheek (masseter muscle) tightening	Not present <input type="checkbox"/> (0)
	Partially present <input type="checkbox"/> (1)
	Present <input type="checkbox"/> (2)
Abnormal ear position	Not present <input type="checkbox"/> (0)
	Partially present <input type="checkbox"/> (1)
	Present <input type="checkbox"/> (2)
Abnormal lip and jaw profile	Not present <input type="checkbox"/> (0)
	Partially present <input type="checkbox"/> (1)
	Present <input type="checkbox"/> (2)
Abnormal nostril and philtrum shape	Not present <input type="checkbox"/> (0)
	Partially present <input type="checkbox"/> (1)
	Present <input type="checkbox"/> (2)
Total pain score	_____ (out of a maximum of 10)

Goat grimace scale

Ear Position



Symmetrical/Forwards (0)

Base of ears positioned forward
Angle of pinnae varies by ear type

Asymmetrical (1)

One ear pitched backward or at a different angle than the other

Backwards (2)

Both ears pinned backwards

Nostril Shape & Dilation



U-shaped/dilated (0)

U-shaped nostril and philtrum profile
Nostrils relaxed/dilated

Intermediate shape/dilation (1)

Partially curved/partially angled nostril
Nostrils somewhat constricted

V-shaped/constricted (2)

V-shaped nostril and philtrum profile
Nostrils constricted

Figure 1: The goat grimace scale with four facial action units developed by Weeder et al. (2023).

Goat grimace scale, continued

Orbital Tightening



Relaxed or alert (0)

No tension around orbit, eyes fully or mostly open
Eye whites or bulging may be present

Withdrawn or tightened (1)

Aperture of eye over half-way closed, tension around orbit
Appears generally inattentive to surroundings

Cheek Tightening



Absent (0)

Relaxed cheek with little to no tension lines

Tensed (1)

Clenching of the jaw results in increased tension of the masseter muscle, causing a bulging cheek appearance. Tension lines at the zygomatic arch beneath the eye may also be present.

Figure 1 (continued): The goat grimace scale with four facial action units developed by Weeder et al. (2023).

Table 2: Assessment of the total pain score in goats using the goat grimace scale (Weeder et al., 2023). Animals showing obvious signs of pain may not be fit for transport.

Deviations in facial areas		Score
Ear position	Symmetrical forwards	<input type="checkbox"/> (0)
	Asymmetrical	<input type="checkbox"/> (1)
	Backwards	<input type="checkbox"/> (2)
Nostril shape and dilation	U-shaped/dilated	<input type="checkbox"/> (0)
	Intermediate shape/dilation	<input type="checkbox"/> (1)
	V-shaped/constricted	<input type="checkbox"/> (2)
Orbital tightening	Relaxed or alert	<input type="checkbox"/> (0)
	Withdrawn or tightened	<input type="checkbox"/> (1)
Cheek tightening	Absent	<input type="checkbox"/> (0)
	Tensed	<input type="checkbox"/> (1)
Total pain score		_____ (out of a maximum of 6)



References

- McLennan, K. M., Rebelo, C. J. B., Corke, M. J., Holmes, M. A., Leach, M. C., & Constantino-Casas, F. (2016). Development of a facial expression scale using footrot and mastitis as models of pain in sheep. *Applied Animal Behaviour Science*, 176, 19–26. <https://doi.org/https://doi.org/10.1016/j.applanim.2016.01.007>
- Weeder, M. M., Kleinhenz, M. D., Reppert, E. J., Fritz, B. R., Viscardi, A. V., Montgomery, S. R., Martin, M. S., Curtis, A. K., Leslie, A. A., Lou, M. E., Hall, M. G., & Coetzee, J. F. (2023). Optimal lameness induction model development using amphotericin B in meat goats. *Translational Animal Science*, 7(1), txad105. <https://doi.org/10.1093/tas/txad105>

