EFSA Journal

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Welfare of pigs during transport

Disclaimer

- This plain language summary (PLS) is a simplified communication of EFSA's *Opinion on the welfare of pigs during transport*.
- The purpose of this PLS is to enhance transparency and inform interested parties on EFSA's work on the topic using simplified language.
- Anyone interested in the more in-depth assessment and analysis should consult the full EFSA opinion, which can be found here.

Animal welfare during transport – an overview

- The safety of the food chain is directly connected to the welfare of animals, particularly those farmed for food production, due to the close links between animal welfare, animal health, and food-borne diseases.
- Stress factors and poor welfare can lead to increased susceptibility to transmissible diseases among animals.
- Good animal welfare practices not only reduce unnecessary suffering but also help to make animals healthier.
- In the framework of its Farm to Fork Strategy, the European Commission (EC) is undertaking a comprehensive evaluation of the animal welfare legislation, including the transport regulation (Council Regulation (EC) No 1/2005).
- This legislation on the protection of animals during transport is based on a scientific opinion adopted in 2002.
- EFSA and the EFSA Animal Health & Welfare (AHAW) Panel have previously published opinions in the topic of the welfare of animals during transport in 2002, 2004, and 2011.

What has EFSA asked the AHAW Panel to do?

- The EC requested EFSA to provide an independent view on the protection of animals during transport.
- The animals in question include cattle, sheep & goats, pigs, horses, and caged species (poultry and rabbits).

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How did EFSA carry out this work?

- The Panel followed EFSA's methodological guidance for the development of animal welfare mandates in the context of the Farm to Fork Strategy.
- Relevant peer reviewed and grey (non-peer-reviewed) literature on current practices on transport of the animal categories and species of interest was analysed, as well as animal movement statistics from the EU's TRACES database.
- Assessment was performed in terms of welfare consequences, animal-based measures (ABMs), and hazards leading to welfare consequences.
- EFSA experts' opinion was used to select and assess the most relevant welfare consequences and develop recommendations to prevent hazards and to correct or mitigate welfare consequences during transport, including quantitative thresholds for microclimatic conditions within the means of transport and for spatial thresholds (minimum space allowance).
- The development of welfare consequences over time were assessed in relation to maximum journey time.

What are the main outcomes?

- Pigs are the highest transported species in the EU, among animals transported as free-moving.
- An average of approximately 31 million pigs were transported between Member States per year in the period from 2019-2021, across all means of transport.
- Road transport constituted 99% of total pig transport from 2019-2021.
- Ten (10) negative welfare consequences were identified as being highly relevant for the welfare of pigs during transport based on severity, duration, and frequency of occurrence. These were group stress, handling stress, heat stress, injuries, motion stress, prolonged hunger, prolonged thirst, resting problems, restriction of movement, and sensory overstimulation.
- The occurrence of each type of welfare consequence varied depending on the stage (preparation, loading, transit, unloading and journey breaks), means (road, sea, air or train), and duration of transport.
- Pigs may experience one or more negative affective states associated with these welfare consequences, including fear, pain, discomfort, frustration, fatigue, and distress.
- Specific ABMs were identified for each of the highly relevant welfare consequences, including behavioural, clinical, and physiological ABMs. These ABMs can be used to assess the condition of animals but are of limited use when animals are in a transport vehicle.
- A wide variety of hazards were identified for the different welfare consequences and transport stages.
- These were related to factors such as mixing unfamiliar pigs, inappropriate handling methods and devices, the use of pick-up pens, inexperienced/untrained handlers, structural deficiencies of vehicles and facilities, poor driving and road conditions, unfavourable microclimatic and environmental conditions, and poor husbandry practices.
- Despite its importance, no agreed scientific definition of the concept of fitness for transport currently exists.
- There are only few conditions leading animals to be unfit for transport, for which ABMs have been established and validated.
- Pigs, especially finishers, are often fasted before transport, which leads to welfare consequences such as prolonged hunger and may indirectly lead to group stress, injuries, and handling stress.
- Lack of fasting may have consequences for the animals in terms of increased risk of motion sickness and hyperthermia but the underlying evidence to support fasting from an animal welfare point of view is not strong, and only involves finishers transported to slaughter.
- The upper threshold of the thermal comfort zone and the upper critical temperature (UCT) of sows were estimated to be 20°C and 22°C dry temperature, respectively. The comparable figures were 22°C and 25°C for finishing pigs, and 25°C and 30°C for weaners of approximately 30 kg.
- The temperature near the pigs, during transport, should not exceed the UCT.
- Providing pigs the recommended space during transport will allow all animals in a compartment to lie down in a semi-recumbent posture.
- It is not known whether providing the recommended space during transport offers pigs enough space to adjust posture in response to acceleration and other events related to driving, thermoregulation, and for effective provision of water during transport

- The amount of time the animals are exposed to the hazards is dependent on the journey duration.
- The number and the severity of hazards that animals are exposed to during transport influence the resultant welfare consequences.
- Motion stress and sensory overstimulation start as soon as a vehicle starts moving and continues while the vehicle is moving potentially leading to fatigue and negative affective states such as fear and distress.
- Group stress and resultant injuries (skin lesions) are results of post-mixing fighting and may start as soon as pigs are mixed and continues during the journey with the severity increasing with journey duration potentially leading to fatigue.
- Pain and/or discomfort from health conditions or injuries might be severe and will worsen over time during transport and may lead to suffering.
- Problems associated with lack of resting become greater with increased journey duration and may lead to fatigue.
- Even when a transport vehicle is fitted with water drinkers, journeys that last more than 8 hours may result to prolonged thirst that can lead to dehydration and associated negative affective states, and thirst-related physiological changes.
- Due to practical difficulties in feeding animals on a transport physiological changes indicative of hunger can be present after 12 hours of transport.
- Allowing pigs a break on a stationary vehicle at the current commercial space allowance does not lead to the intended drinking, eating, and resting and thus does not mitigate the welfare consequences of the journey.

What were the limitations of the currently available data?

- Several sources of uncertainty were identified during the assessment:
  - Transport as a complex stressor has been studied much less compared to housing or other animal welfare factors especially under European conditions.
  - Lack of documented ABMs that can be used for analysis.
  - Lack of available relevant studies under recommended conditions.
  - The time available for the literature search and analysis was restricted.
  - A limited number of experts were selected based on their knowledge of animal welfare in the different pig categories.
- The AHAW Panel considered these sources of uncertainty associated with the assessment methodology and inputs and their impact on the study's outcomes and implications.
- For each of the conclusions listed below, the AHAW Panel reported their uncertainty qualitatively.
- For a complete report on the Panel's expressed uncertainties, please consult the full opinion.

Key implications and recommendations

- To reduce the impact of transportation on animal welfare, greater space, lower temperatures, and reduced journey duration are required, compared to current rules and practices.
- The concept of fitness for transport should be properly defined, including guidelines and thresholds based on ABMs.
- Pre-transport fasting duration should be adjusted to the category of pig and be appropriate for the planned journey duration.
- Pre-transport fasting should consider whether pigs are transported for slaughter or for further fattening/breeding.
- It is recommended to expose finishers being transported to a pre-transit fasting of less than 10 hours. This includes the time taken to load. For other pig categories pre-transit fasting should likely be shorter.
- To reduce the risk of welfare consequences due to exposure to high effective temperatures, the temperature inside vehicles transporting pigs should not exceed the UCT, which is estimated to be 22°C dry temperature for sows, 25°C for finishing pigs, and 30°C for weaners of approximately 30 kg.
- Future research should be carried out regarding the development of systems to maintain the microclimatic conditions in stationary as well as moving vehicles across different compartments and deck heights by e.g., air conditioning.

- Sufficient space should be allocated to animals during transport to allow them to adjust posture and balance. Minimum space allowance should be calculated using a validated scientific method (see full opinion for more information).
- Based on evidence on continuous welfare consequences involving stress and negative affective states the journey duration should be kept to a minimum.
- Maximum journey time should consider the stress (and sometimes fear) that the animals will experience continuously or semi-continuously.
- During transport the animals will get thirsty after 8 hours, even when the transport vehicle is fitted with drinkers, and hungry 12 hours after the last feed, which should be considered when selecting the maximum journey time as well.
- To end the exposure to the hazards of transport and to allow the animals to eat, drink and recover, they need to be unloaded from the transport vehicle to suitable premises.