Question to EURCAW-Poultry-SFA

Reference of the query: Q2E-Poultry-SFA-2022-006
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Background context provided by the solicitor

A significant number of 1-day-old chicks gets exported through air transport. The competent authority at the airport would like to draw up best practices regarding the space allowances during air transport of 1-day-old chicks, 1-day-old ducklings, 1-day-old geese, 1-day-old pheasants and 1-day-old turkeys, but we don't find a lot of information on this subject.

Question

Are there any guidelines, best practices or recommendations available regarding the necessary or optimal space allowances for air transport of 1-day old birds of these species, during summer and during winter months?

Answer

The EURCAW poultry-SFA did not find any guidelines, best practices or recommendations available regarding the necessary or optimal space allowances for air transport of 1-day-old birds. However, some recommendations on the transport of birds, and especially of day-old chicks, can be extracted from the scientific opinion on the welfare of domestic birds and rabbits transported in containers (EFSA, 2022).

1. Introduction

More than 200 million day-old chicks were exported in 2020 from the European Union to third countries, mainly by road but also by air transport (EFSA, 2022). Air transport concerns high-quality breeding stock that is shipped over very long distances by plane.

According to EFSA scientific opinion (2022), the standard size of transportation boxes (transport by road) for chicks (Gallus gallus) is 60x40x12 cm, containing 90 chicks under normal circumstances, with an individual space of 26.7 cm^2 per chick. The standard size of transportation crates for pheasants and partridges is 49.7x26.5x12.7 cm, containing approximately 80 pheasants, with an individual space of 16.5 cm^2 per chick, or 100 to 120 partridges, with an individual space of 13.2 to 11 cm^2 per chick. The Council of the European Union (2005) recommends 21 to 25 cm^2 per chick of individual space during transportation in containers (400 to 475 chicks/m^2).

2. Welfare issues and recommendations regarding transport of day-old chicks

The EFSA scientific opinion (2022) identified the welfare consequences for day-old chicks during road or air transport (table 1), but the space allowance related to the season of transport was not specified. There is no recommendation available on the space allowance during transport (air or road) for day-old chicks.

Table 1: Welfare consequences identified as highly relevant (x in the table) or not relevant (- in the table) for road and air transport of day-old chicks to production site (EFSA, 2022)

Transport scenario 2: Transport of day-old chicks by road and air to production sites					
Welfare consequence	***Preparation***	***Loading***	***Journey***	***Arrival***	***Uncrating***
Handling stress	*n.a*	x	–	–	x
Sensory overstimulation	*n.a.*	x	x	x	x
Motion stress	*n.a.*	–	x	–	–
Heat stress	*n.a.*	–	x	x	x
Cold stress	*n.a.*	x	x	x	x
Prolonged hunger	*n.a*	x	x	x	x
Prolonged thirst	*n.a.*	x	x	x	x

There is a gap of knowledge on air transport conditions (space allowance or other) in relation to the summer or winter season but information on the comfort zone of day-old chicks related to the temperature is available. Cold and heat stress, potentially related to the season, are determined as highly relevant welfare consequences for day-old chicks. The severity of thermal stress depends on the effective temperature and the duration of exposure. According to EFSA (2022), cold and heat stress are the most relevant welfare consequences for day-old chicks during transport. The thermo-comfort zone of day-old chicks is estimated to be between 30°C and 35°C. If the effective temperature stays between these two thresholds, day-old chicks will not experience heat or cold stress.

The holding stages preceding and following flights (waiting and loading, unloading and waiting) in uncontrollable external climatic conditions could be a welfare issue for day-old chicks whereas the environmental conditions in the pressurised plane should be adapted (heated and ventilated) to provide appropriate conditions to the birds.

2.1. Heat stress

Heat stress is when the chicken experiences stress and/or negative affective states such as discomfort and/or distress due to difficulties to maintain the body temperature in the thermal comfort zone when exposed to high effective temperatures (EFSA, 2022). Too high environmental temperature and humidity, lack of ventilation or exposure to the sun can cause heat stress.

According to EFSA (2022), the recommendations to avoid heat stress in day-old chicks during transport (not specific to air transport) are:

- The effective temperature should not exceed 35°C
- In the vehicle, crates should be spaced out to allow air circulation and good ventilation
- During loading, arrival and unloading, chicks should be protected from direct sun and provided ventilation
- At the arrival, chicks should be removed from boxes immediately

2.2. Cold stress

Cold stress is when the chicken experiences stress and/or negative affective states such as discomfort and/or distress due to difficulties to maintain the core temperature above 40°C when exposed too low temperatures (EFSA, 2022). Day-old chicks can suffer cold stress during loading and unloading if they are submitted to too

low temperatures, high humidity or rain. During the journey, birds will suffer cold stress in case of low temperature and/or too high airspeed (effective temperature too low).

According to EFSA (2022), the recommendations to avoid cold stress in day-old chicks during transport (not specific to air transport) are:

- At loading, chicks should be dry before crating
- Providing heat in the loading area
- During the journey, the core temperature of day-old chicks should be maintained above 40°C with the appropriate temperature, humidity and ventilation to ensure an effective temperature not below 30°C.
- At arrival, the same climatic conditions should be ensured, avoiding windy areas and the coldest hours of the day for transportation.

3. Conclusion

There are gaps of knowledge on optimal space allowance in day-old chicks during transport (air or road). EURCAW Poultry-SFA did not find any scientific or technical guidelines and the EFSA scientific opinion (2022) did not identify space allowance as a hazard compromising welfare during day-old chicks' transport. There is no scientific evidence that cold stress can be prevented by increasing the stocking density inside the boxes and that heat stress can be prevented by decreasing the stocking density. The stocking density given are examples of common practices and the Centre does not now if it avoid the welfare consequences thermal stress (which depend on external factors). Air-transported day-old chicks being high-quality breeding stock, it can be assumed that their transport conditions are well thought to avoid mortality but this is not a full guarantee that welfare would be optimal.

4. References

COUNCIL OF EUROPEAN UNION, 2005. Council Regulation (EC) No 1/2005 of 22 December 2004 on the protection of animals during transport and related operations and amending Directives 64/432/EEC and 93/119/EC and Regulation (EC) No 1255/97. *Official Journal of the European Union*.

EFSA 2022. Scientific opinion on the welfare of domestic birds and rabbits transported in containers. *EFSA Journal,* 20**,** 188.