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What do huddling, shivering and panting indicate?

- Huddling, shivering and panting are thermoregulatory behaviours and indicate thermal stress.
- Thermoregulatory behaviours indicate that pigs are outside their thermo-neutral zone. The lower limit of the thermoneutral zone of pigs is between 10-15°C and the upper limit is up to 25 °C depending on body weight.
- Low ambient temperatures, high levels of humidity, wet body surfaces, air flows and draughts can cause huddling and shivering and indicate **cold stress** (mainly in young and lean pigs).
- High ambient temperatures in combination with a high level of humidity, a lack of ventilation, or of cooling and a high stocking density on trucks and in lairage pens can cause panting which indicates **heat stress**.



Legal requirements



Council Regulation (EC) **No 1/2005**: Requirements associated with climate comfort are specified in:
{Articles 3-6}: planning, considering weather conditions.
{Annex I, Chapter II, Point 1.}: requirements regarding the vehicle.
{Annex I, Chapter III, Point 2.6.}: ventilation.

Council Regulation (EC) **No 1099/2009**: Requirements associated with climate comfort are specified in:
{Chapter II, Article 3, Point 2.a}: provision of physical and thermal comfort.
{Annex II, Point 1.1.} ventilation systems.



Note: Listed requirements are paraphrasing the literal text of the regulation and are not comprehensive. Moreover, there might be stricter national legislation in place. For a more detailed description on the specific requirements, see the ["Review on arrival and lairage management at pig slaughterhouses"](#).

Inspection method (recommended)

- The official inspector assesses thermal stress of pigs on vehicles waiting on the premises of the plant and checks the documents of the consignments.
- Before unloading and in lairage pens, the inspector assesses if pigs are **huddling, shivering or panting**. If they are, the inspector takes records and carries out corrective actions to ensure the situation complies with legal requirements in the future.
- If pigs pant, shiver or huddle, the inspector evaluates the SOPs of transport business and/or slaughterhouse concerning the assessment and management of thermal stress for pigs.

Assessment of ambient temperature

To check if the basic requirements for pigs' thermal comfort are met, record the ambient temperature both in the vehicle and lairage pen, e.g. at the presumably hottest place far away from ventilation localizations. Additionally, under cold weather conditions the occurrence of wet and draughts can be assessed. Check if transport business planned transportation respecting meteorological weather forecasts.



All animals in the lorries or inside the lairage pens should be visually assessed. In lairage, the assessor must stay outside the pen. Huddling is best observed in resting animals; pigs should therefore be assessed while resting on truck before unloading or in lairage pens.

Cold stress

Huddling:

Huddling is defined as a pig lying with more than half of its body in contact with another pig (i.e. virtually lying on top of another pig).

The proportion of animals showing huddling behaviour must be related to the number of resting pigs.

High risk to welfare: $\geq 20\%$ of pigs resting on truck or in lairage pen are huddling.

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Most of these pigs are lying with more than half of their body in contact with another pig. This so called huddling behaviour is a thermoregulatory behaviour and indicates cold stress in pigs.

Scan the QR code to watch these pigs showing huddling behaviour.

Shivering:

Shivering is defined as the slow and irregular vibration of any body part, or of the body as a whole due to muscle activity in response to cold.

Visually examine the selected group of animals and estimate the percentage of pigs that are shivering.

High risk to welfare: $\geq 20\%$ of pigs resting on truck or in lairage pen are shivering.

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The pig in the corner shows shivering: slow and irregular vibration of any body part, or of the body as a whole due to muscle activity in response to cold.

Scan the QR code to watch a video of this shivering pig.

Heat stress

Panting:

Panting is defined as breathing in short gasps, i.e. high frequency, shallow breathing, with mouth open.

The assessor must score the percentage of pigs which are panting.

High risk to welfare: $\geq 20\%$ of pigs on truck or in lairage pens are panting.

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The standing pig is breathing in short gasps, i.e. high frequency, shallow breathing, with mouth open.

Scan the QR code to watch a video of the pig showing panting behaviour.

Source for the assessment method: Welfare Quality® protocol



EU Reference Centre
for Animal Welfare *Pigs*

If you have any questions or suggestions regarding this factsheet please contact info.pigs@eurcaw.eu