



# LAPS EFSA scientific opinion

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# Legal Background

## Council Regulation (EC) N° 1099/2009

- **Art 2(f) “Stunning”:** any intentionally induced process which causes loss of consciousness and sensibility without pain, including any process resulting in instantaneous death
- **Art 3(1):** animals shall be spared any avoidable pain, distress or suffering during their killing and related operations
- **Art 4:** animals shall only be killed after stunning in accordance with the methods and specific requirements related to the application of those methods set out in Annex I of the Regulation
- **Art 4:** allows the Commission to amend Annex I to this Regulation as to take into account scientific and technical progress on the basis of an opinion of the EFSA

## Annex I

- list of the approved stunning interventions and related specifications

## A bit of history...

2013

- First application submitted for evaluation
- EFSA considered that the assessed studies did not pass the eligibility criteria
- No further assessment undertaken

2016

- New application with new scientific evidences
- The eligibility criteria were satisfied (considering the scientific papers as a whole)
- To assess the exact sequence of the events during the LAPS process, EFSA asked the applicant for additional data and information
- Full assessment undertaken

# ToRs as provided to EFSA by the EC

Limited to the stunning of broiler chicken for slaughter (i.e. killing for human consumption)

Assess to what extent the system is able to provide a level of AW at least equivalent to that ensured by the currently allowed methods

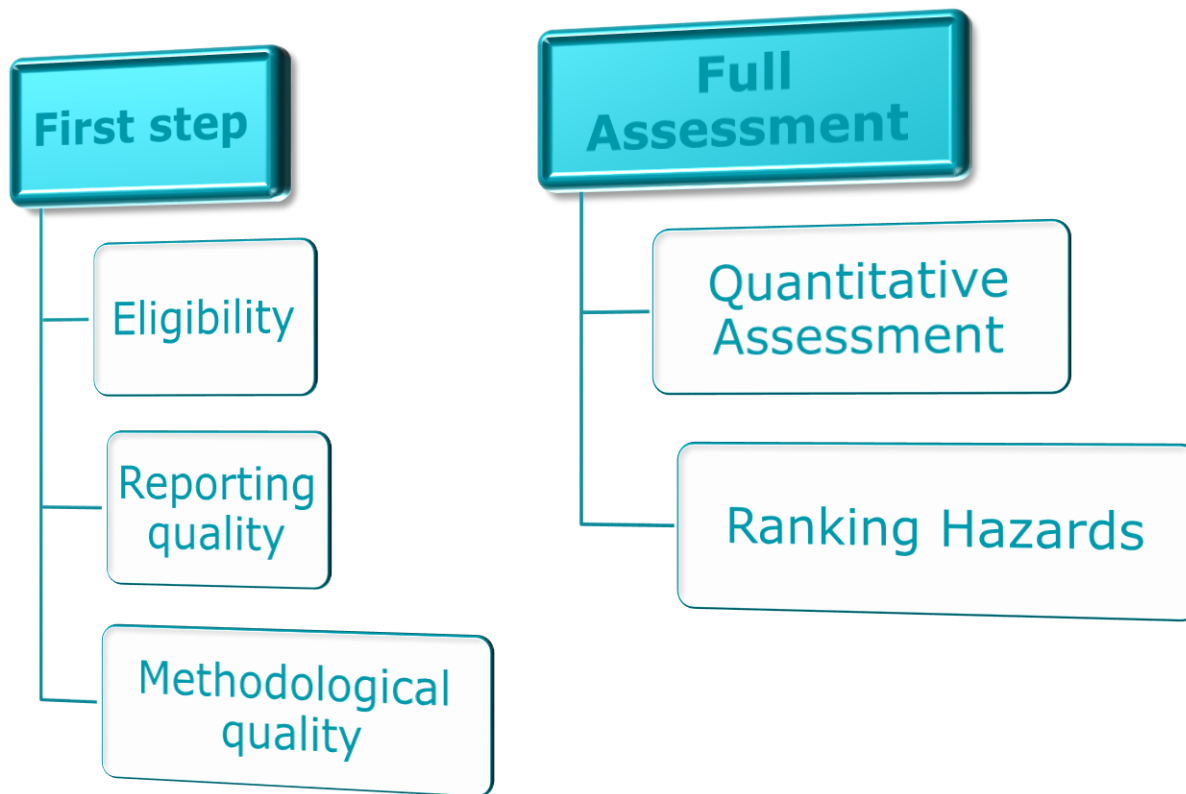
extent to which the use of LAPS is an acceptable method for the stunning meeting the requirements of Council Regulation (EC) No 1099/2009

extent to which the findings are consistent with other sources of information

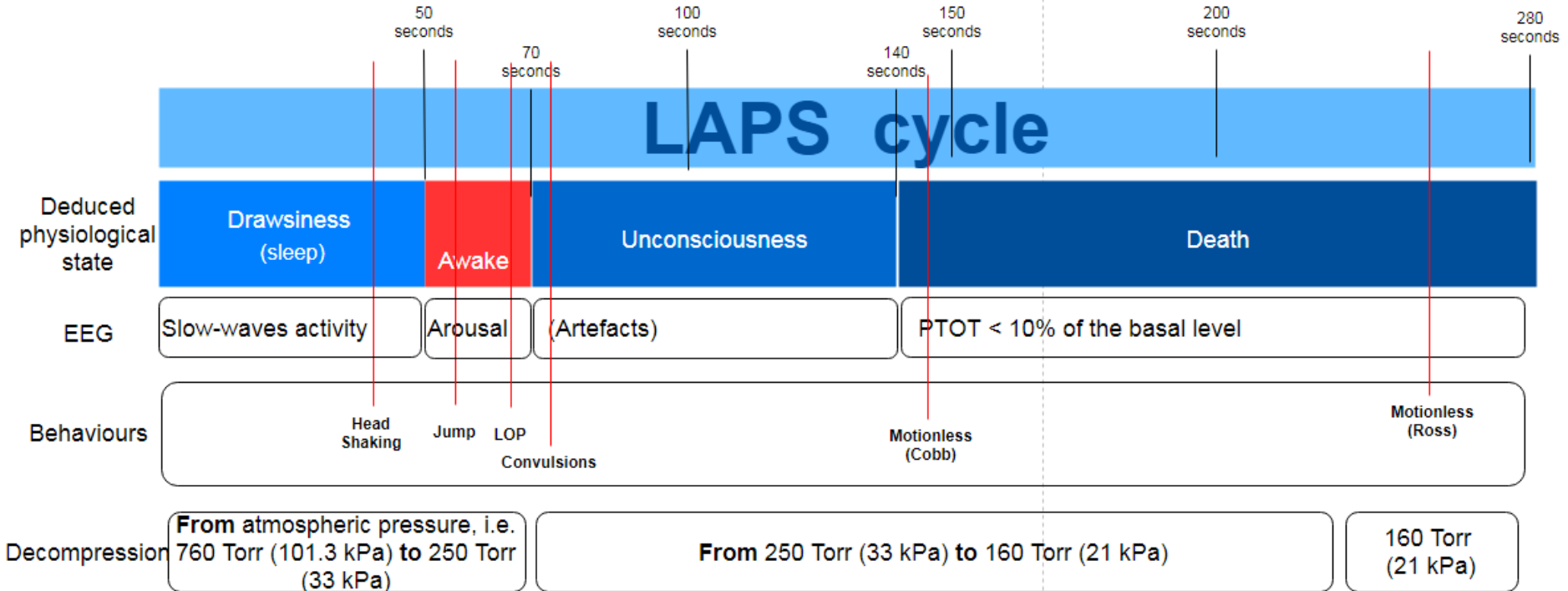
requirements attached to the use of LAPS

extent to which the findings may be valid under commercial conditions in the EU

# METHODOLOGY overview



# OUTCOMES – sequence of events



# OUTCOMES – Hazards ranking

Method	Hazard	Rank estimate (n=19)	Min	Max
W	Unintended electric shock	12	11	12
W	Neck cutting	11	11	12
W	Bleeding	10	10	10
G	Acidic gas or gas mixture	9	8	9
W	Hanging and compression of the legs	8	8	9
G	Respiratory stimulant gas or gas mixture	7	6	7
L	Gas expansion in body cavities / internal organs	6	6	7
L	Removal of air	5	4	5
W	Handling	4	4	5
G	Tipping / Tilting	3	3	3
L	Noise	2	1	2
L	Decreasing air humidity	1	1	2

L = LAPS  
 G = gas  
 W = waterbath

**L ≤ G < W**

**Wilcoxon Rank  
 Sum Test  
 Stat = 28,  
 p-value = 0.025**

# HAZARD RANKING CONCLUSIONS

- According to the expert ranking of hazards, the **risk of poor animal welfare** is considered to be **lower under the LAPS method when compared to use of electrical water-bath stunning**.
- The expert ranking of hazards could not statistically demonstrate a difference between LAPS and the gas stunning methods (excluding inert gases alone which were not included in the ranking exercise).



# CONCLUSIONS

- The LAPS method can be considered to be **at least equivalent**, in terms of animal welfare outcomes, to at least one of the currently available stunning methods
- The LAPS methodology was assessed based on the data generated from the studies submitted by the applicant, which used **broiler chickens for slaughter** (i.e. killed for human consumption) **weighting less than 4 kg** in the different experiments
- The conclusions of this assessment cannot be extended to other production types of *Gallus gallus* (i.e. layers, breeders and chicks). For example, if the LAPS methodology is intended to be used for the stunning of **layers**, further studies would be required to determine the effect of decompression on **intra-abdominal shell eggs**
- The LAPS method may, in addition to commercial slaughter, be **suitable for depopulation**, respecting the technical conditions defined in the present conclusions

# ESSENTIAL PARAMETERS

Seconds from the start	Pressure	Oxygen concentration
0	Atmospheric	~ 21%
≥ 50	≥ 250 Torr	~ 7%
≥ 140	≥ 180 Torr	~ 5%
≥ 260	≥ 150 Torr	< 5%

Guidance on the assessment criteria for studies evaluating the effectiveness of stunning interventions regarding animal protection at the time of killing

Under revision!!

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**Thanks for your attention !**



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