

BVA and BVPA response to Animal Welfare Committee (AWC) evidence review on the welfare impacts of electrical stunning of poultry in slaughterhouses and on-farm slaughter

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Introduction

1. The British Veterinary Association (BVA) is the national representative body for the veterinary profession in the United Kingdom. With more than 19,000 members, our primary aim is to represent, support and champion the interests of the United Kingdom's veterinary profession. We therefore take a keen interest in all issues affecting the profession, including animal health and welfare, public health, regulatory issues and employment matters.
2. The British Veterinary Poultry Association (BVPA) is an association of over 230 poultry veterinarians and scientists working within the poultry industry.
3. We welcomed the opportunity to contribute to Animal Welfare Committee (AWC) evidence review on the welfare impacts of electrical stunning of poultry in slaughterhouses and on-farm slaughter.

We would be grateful to hear any comments you may have about the welfare of poultry at the time of killing stunned by electrical means or by the variety of alternative stunning methods

4. BVA has a [policy position](#) on the welfare of animals at slaughter which we believe AWC will find useful for its evidence review. Slaughter processes should result in a humane death for animals, minimising avoidable pain, distress, fear, and suffering. Welfare at slaughter begins on-farm, starting with preparation of animals for slaughter, ensuring they are fit for transport, and ending with slaughter at the abattoir or harvesting station.
5. Vets play a significant role here. Official Veterinarians (OVs) are highly trained with multi-species knowledge and continued professional development to protect animal health, animal welfare, public health, and food safety standards. OVs possess a breadth of enforcement powers, and arguably see the largest throughput of animals of any area of veterinary work. OVs play a vital role in helping maintain public trust and commercial confidence in food production, from safeguarding animal welfare, animal and public health, to identifying notifiable disease to prevent disease spread and providing the trade certification that so many of the UK's global customers demand. The role of the OV in abattoirs, whatever the size, is therefore vital in terms of ensuring compliance with current legislation for the health and welfare of animals at slaughter.

Electrical-waterbath stunning

6. The [EFSA Scientific Opinion on the welfare of poultry at slaughter](#) and the [EFSA Scientific Opinion on the electrical requirements for waterbath stunning equipment applicable for poultry](#) concluded that it is not possible to ensure that all birds are effectively stunned and rendered unconscious before slaughter using electrical-waterbath stunning. Welfare issues associated with the electrical-waterbath stunning of poultry, include:
 - **Live shackling and inversion of birds** – Birds are shackled by both legs and suspended upside down so that the head can be presented for stunning in the waterbath. Evidence shows that live shackling and inversion can cause distress, pain and discomfort, due to compression of the periosteum by the shackle and variations in leg size amongst individual birds.^{1, 2}
 - **Pre-stun shocks** - Birds that make contact with the electrified water before the immersion of the head may receive pre-stun electric shocks.

¹ FAWC, 2009. Report on the Welfare of Farmed Animals at Slaughter or Killing Part 2: White Meat Animals. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/326745/FAWC_report_on_the_welfare_of_farmed_animals_at_slaughter_or_killing_part_two_white_meat_species.pdf

² [EFSA \(2019\) Scientific Opinion on the electrical requirements for waterbath stunning equipment applicable for poultry](#)

- **Variable current** - The actual current that each bird receives can vary based on several factors, including the number of birds in the waterbath at any one time, contact between adjacent birds and variations in the resistance of each bird. Birds exposed to wet weather during transport can have a poor stun due to electrical tracking around, rather than through, the body. Consequently, birds may receive too much or insufficient current, resulting in an ineffective stun.
- **Electro immobilisation** - the delivery of insufficient current can result in individual birds being electro-immobilised, rather than stunned and therefore still conscious at the time of slaughter. OV's and Animal Welfare Officers/slaughterhouse staff are unable to differentiate between the two states, making enforcement of legally required effective stunning impossible.

7. Given the limitations of electrical-waterbath stunning, we support the EFSA recommendations regarding its use:

- Regulation should indicate minimum current for each bird, frequency and current type as well as the wave characteristics duty cycle and waveform.³
- There should be better surveillance and monitoring of the electrical parameters in use at abattoirs and, in addition, methods that allow the accurate measurement of actual electrical current flowing through each bird should be further developed.
- Research on effective stunning should be validated by the measurement of EEG activity and related to clinical measures which are easier to use in practice.
- There is an urgent need to develop electrical methods that guarantee 100 % stun.
- Unless the problems described in [the [EFSA Scientific Opinion on the electrical requirements for waterbath stunning equipment applicable for poultry](#)] for all existing electrical-waterbath stunning methods can be resolved, other stunning methods should be used.

8. Until electrical-waterbath stunning is replaced with more effective stunning methods, all of the UK regulations on the Welfare of Animals at the Time of Killing should specify that electrical-waterbath stunning must be carried out in accordance with the minimum currents laid down in Annex I of EC 1099/2009. We are extremely concerned by the omission of these parameters for poultry killed in accordance with religious rites in the Welfare of Animals at the Time of Killing (England) Regulations 2015. Wales, Scotland, and Northern Ireland have not changed from the parameters set out in Annex 1 of EC 1099/2009. This omission in England means that under the derogation for religious slaughter poultry can legally be stunned at higher frequencies outside of the parameters specified in Annex 1 of EC 1099/2009. We are concerned that these frequencies do not ensure that poultry are effectively stunned before slaughter and so will suffer avoidable pain and distress. Notably, the FSA classify electrical-waterbath stunning delivered outwith the parameters specified in Annex 1 of EC 1099/2009 as non-stun slaughter.

Phasing out electrical waterbath stunning

9. Many slaughterhouses in the UK have moved towards the gas stunning of poultry as an effective alternative to electrical-waterbath stunning, which also minimises the need for handling and restraint of birds. However, UK legislation currently specifies that poultry must be exposed to the gas for long enough to ensure they are killed. This means that under current legislation, gas

³ Annex I of EC 1099/2009 sets out that electrical-waterbath stunning shall be carried out in accordance with the minimum currents laid down therein, and animals shall be exposed to that current for a minimum duration of at least four seconds:
Table 2 — Electrical requirements for electrical-waterbath stunning equipment (average values per animal)

Frequency (Hz)	Chickens	Turkeys	Ducks and geese	Quails
<200 Hz	100mA	250 mA	130 mA	45 mA
From 200 to 400 Hz	150mA	400 mA	Not permitted	Not permitted
From 400 to 1 500 Hz	200 mA	400 mA	Not permitted	Not permitted

stunning is not acceptable for Halal production as only stunning methods that deliver an effective recoverable stun ie. a stun that renders the animal unconscious and insensible to pain but does not kill the animal before neck cutting, meet Halal criteria.

10. Consequently, unless there is a viable, recoverable stun alternative for poultry that is acceptable for Halal production, we would caution against the immediate cessation of electrical-waterbath stunning in all slaughterhouses, as we are concerned that this could result in an increase in non-stun slaughter.
11. With this in mind, electrical-waterbath stunning should be gradually phased out and the meat industry should move towards recoverable stunning methods that immediately and effectively stun birds of all sizes, strains, and ages, and remove the need for live shackling and inversion pre-slaughter. There is therefore an urgent need for research into the development of recoverable stunning methods that effectively stun birds of all sizes, strains, and ages, and remove the need for live shackling and inversion pre-slaughter.
12. Islamic scholars and Halal certification bodies should also be consulted to ascertain whether simple stunning by gas methods would be accepted in Halal production. If simple stunning via gas methods were considered suitable for Halal production (ie. deliver a recoverable stun), consideration should then be given to amending legislation to permit simple stunning by gas methods. This would enable the complete phasing out of electrical-waterbath stunning and remove the need for live shackling and inversion.
13. Any consideration of amending legislation to permit simple stunning by gas methods must accurately determine the maximum end of exposure to sticking interval to prevent the potential for recovery of consciousness before sticking, as well as assessing the logistical changes, and potential impact on animal welfare, that may be required to implement this in abattoirs.

Alternative methods for effective stunning of poultry

14. We are also aware of several alternative methods for stunning poultry that address some of the welfare concerns that arise from electrical-waterbath stunning.

Individual constant-current electrical stunning

15. The [Dutch Vision](#) head-only simple electrical stunner for broilers individually exposes birds to a constant current that renders birds immediately unconscious, and follows this with a low constant current to reduce wing flapping and extend the period of unconsciousness. The stun is delivered to shackled and inverted birds using two head electrodes. While the electrodes are in place, the current is measured and the voltage can be adjusted. Exiting currents are measured and recorded 10 times per second for each bird, which provides an overview of the stunning parameters for inspection by OV's. Any birds that have received an ineffective stun are immediately directed to an electrical-waterbath stunner receive a second stun, however we note there is a considerable time delay before poultry enter the waterbath stunner.
16. Evidence suggests this method can deliver an effective stun⁴, however we recognise this method still presents welfare concerns in its use of live shackling and inversion, as well as the fact that it has no immediate method of dispatch for animals that do not receive an effective stun.
17. While we consider that Dutch Vision represents an improvement to electrical-waterbath stunning in terms of its ability to deliver an effective stun, additional electrical stunning techniques that immediately and reliably stun birds of all sizes, strains, and ages, while minimising handling and restraint, should be developed. In developing new electrical stunning methods for poultry there should be further research into:
 - electrical pathways through birds in relation to system design and the requirements of an effective stun;

⁴ Gerritzen, Marien & Hattum, Theo & Reimert, Henny., 2015. Efficacy of the Dutch Vision high-low electrical head-only poultry stunner. 10.13140/RG.2.1.2174.3767.

- high frequency AC and pulsed DC systems, which should be assessed to determine the optimum combination of current and frequency to stun birds of all sizes, strains and ages effectively; and
- electrical stunning systems which address the concerns of variable current and reduce the need for inversion and live shackling.

Gas methods

18. Stunning by exposure to gas mixtures reduces the need for pre-slaughter handling, live shackling and inversion, as well as removing the risk of pre-stun shocks or ineffective stuns associated with electrical-waterbath stunning. We are aware that the LINCO gas stunning system, Anglia Autoflow, Stork and Meyn, and the Marel Atlas system are currently being used to stun poultry at plants in the UK.
19. We would welcome further scientific evidence to demonstrate the point at which birds are rendered unconscious before exposure to aversive concentrations of carbon dioxide in the LINCO gas stunning system. We note the FAWC observation that while the LINCO gas stunning system⁵ represents an improvement on electrical-waterbath stunning for the aforementioned reasons, there is a lack of scientific data to demonstrate at what point birds are rendered unconscious before exposure to the more aversive 40% carbon dioxide concentrations.

Low Atmospheric Pressure Stunning (LAPS)

20. LAPS stuns birds by gradually reducing the atmospheric pressure, consequently reducing the amount of oxygen available for birds to breathe. The EFSA opinion on LAPS in broiler chickens concluded that it provides “a level of animal welfare at least equivalent to that provided by at least one of the currently allowed methods” eg. Electrical-waterbath stunning or gas methods.⁶
21. However, we note this opinion applies specifically to broiler chickens weighing less than 4kg, and there are knowledge gaps with regards to the effect of expansion of gases in body cavities, extent of expansion and potential for aversion. Further research should therefore be undertaken into the effects of LAPS on different sized birds, different species, potential for aversion, and the effect of gas expansion in body cavities before it is widely used as a stunning method for poultry or game in the UK.

Emergency on-farm killing

22. The current standard method of emergency on-farm killing is cervical dislocation without prior stunning for birds up to 3 kg. We believe greater emphasis is needed on ensuring that anyone performing this procedure receives adequate training, understands how to carry it out effectively, and can reliably assess its success. Education on alternative methods is also essential.
23. Several commercial devices such as the Livetec Nex®, CASH Small Animal Tool®, and the TED Captive Bolt Stunner have been developed as potential alternatives, including for larger birds (where mechanical assistance is a legal requirement). However, evidence regarding their uptake and practical application remains limited. Further to these, a commercially available on-farm electrical euthanasia device, the H2H Euthanizer, has also been introduced and may offer a more workable and consistent alternative.
24. It is our understanding that different EU countries employ a range of different on-farm culling methods, and therefore we are calling for further research into these approaches and their welfare implications. If a viable, practical, and welfare-focused alternative is available, or emerges, it should be encouraged as an improvement over the current non-stunned cervical dislocation method.

⁵ Where birds are lowered into a tunnel and gradually exposed to an increased concentration of carbon dioxide increasing from 5 to 50%

⁶ EFSA AHAW Panel (EFSA Panel on Animal Health and Welfare), 2017. Scientific Opinion on the low atmospheric pressure system for stunning broiler chickens. *EFSA Journal* 2017;15(12):5056, 86 pp. <https://doi.org/10.2903/j.efsa.2017.5056>