



## Humane Slaughter Association

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### **FOR IMMEDIATE RELEASE**

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#### **Study funded by HSA and DEFRA finds Low Atmospheric Pressure Stunning is not a humane alternative to Carbon Dioxide for stunning pigs. Alternatives must now be urgently implemented.**

The Humane Slaughter Association's position regarding the slaughter of all animals is that they should be killed as humanely as possible with every reasonable effort made to reduce pain, suffering and distress to an absolute minimum.

Carbon Dioxide (CO<sub>2</sub>) is widely used to stun pigs prior to slaughter. However, robust scientific evidence shows that it causes significant animal welfare issues. As early as 2003, the then UK Farm Animal Welfare Council (FAWC) called for CO<sub>2</sub> to be phased out within five years<sup>1</sup>, yet two decades later this method continues to be widely used (for example, in the UK, over 80% of pigs are stunned with CO<sub>2</sub>). The HSA view is that a more humane alternative to CO<sub>2</sub> should be adopted as soon as possible.

In support of this aim, in 2018 the HSA co-funded research alongside the UK Department for Environment, Food and Rural Affairs (DEFRA) to test one potentially humane alternative stunning method – Low Atmospheric Pressure Stunning (LAPS). Unfortunately, the research showed that LAPS was not a humane alternative for stunning pigs, although it had previously been shown to be a more humane method of poultry slaughter. The researchers conclude that “Collectively, our results show that both LAPS and CO<sub>2</sub> stunning are associated with several indicators of poor welfare and are equally aversive to pigs.” The final report<sup>2</sup> detailing the project findings has just been published and can be downloaded at:

<https://sciencesearch.defra.gov.uk/ProjectDetails?ProjectId=19805>

It was important to test a method which could potentially have provided a humane and sustainable solution for pig stunning. However, now that LAPS has been shown not to be the alternative to CO<sub>2</sub> that many had hoped, it is essential that other alternatives are adopted without undue delay.

#### **Background – welfare impacts of existing pig slaughter methods**

In the UK and Europe, all pigs are stunned before slaughter and two commonly used methods exist: stunning with carbon dioxide gas or electrical stunning. Both methods have advantages and disadvantages in terms of animal welfare.

#### **Carbon dioxide**

This method involves exposing pigs to a high concentration of CO<sub>2</sub> gas which renders them unconscious. In the UK, regulations require pigs to be killed by extended exposure to CO<sub>2</sub>, whereas

in other countries, pigs can be rendered unconscious by CO<sub>2</sub> and then killed using another method, typically by cutting the arteries and veins in the neck to kill the animals by blood loss.

Carbon Dioxide has been shown to be strongly aversive to pigs (3,4) (and almost all other mammals in which it has been tested), because it causes breathlessness or pain in high concentrations and anxiety even at lower concentrations. Given these welfare issues, the HSA recommends that CO<sub>2</sub> is replaced with a more humane method as soon as possible.

### ***Electrical stunning***

Electrical stunning is typically performed by passing electrical current through the pig's brain using electrodes placed on either side of the pig's head. When performed correctly, the pig is rendered unconscious instantaneously. Once pigs are unconscious, they are then killed by bleeding.

When correctly used, electrical stunning causes less suffering than CO<sub>2</sub> during the actual stunning process. However, when considering the overall animal welfare impact of different stunning methods, it is important to consider the entire slaughter process, including handling prior to slaughter. To apply electrical stunning, pigs are often handled in ways which can cause them more stress than the handling procedures used for CO<sub>2</sub> stunning as they are usually separated from their group or placed in restrainers, in single file, prior to stunning. There is also a greater risk of inadequate stunning if electrical stunning is not performed correctly.

The current systems for CO<sub>2</sub> stunning allow pigs to be handled in groups. As pigs are social animals, this can help them stay calmer. Stunning is also automated, reducing the risk of error.

Despite these advantages of CO<sub>2</sub> stunning systems, they do not negate the negative welfare impacts of CO<sub>2</sub> exposure. Therefore, CO<sub>2</sub> should be replaced with a more humane system whilst retaining the handling and automation advantages.

### **What are the alternatives?**

Although personal opinions and choices on the consumption of pork vary greatly, the slaughter of pigs is likely to continue for the foreseeable future as many people will continue to choose to eat pork. Therefore, more humane slaughter methods are necessary.

It is often suggested that there are no viable alternatives to CO<sub>2</sub> which could be rapidly adopted. However, modifications to existing electrical and gas stunning systems could potentially make them more humane.

It was conclusively shown in the 1990s that inert gases such as argon are less aversive than CO<sub>2</sub> to pigs and could replace it in gas stunning systems (3,4). Electrical stunning could be combined with more humane handling systems which allow animals to be handled in groups.

Inert gas stunning systems are a particularly promising solution, not least because they can be retrofitted into existing CO<sub>2</sub> stunning equipment. However, these systems have not been implemented by the industry yet, despite the 2003 FAWC report stating "Development work is required to produce a new system for use with argon, nitrogen or other non-aversive gas mixtures. FAWC does not see the achievement of engineering solutions as an insurmountable problem."<sup>1</sup> Nevertheless, engineering challenges to switching to the use of inert gases still remain, and the HSA urges the industry to address these without further delay.

We are pleased to see that both approaches are being investigated alongside others as part of the [EU-funded Pig Stun project](#) which is examining several approaches including improved electrical stunning and three different gas-based systems. Crucially, it will test the use of inert gas systems which can be retrofitted to existing dip-lift or paternoster systems which currently use CO<sub>2</sub>.

Given the disappointing finding that LAPS is not a humane alternative to CO<sub>2</sub> and that CO<sub>2</sub> use continues, the HSA is eager to work with the industry and regulators to help facilitate rapid progress to address this major animal welfare challenge.

Recently the pig sector has formed a [working group](#) which aims to address this issue. We look forward to working with this group to address any remaining barriers to the adoption of a more humane method and are encouraged that this issue is now receiving much-needed attention from those best placed to ensure progress.

HSA Chief Executive Huw Golledge said: *“The HSA welcomes the pig sector’s initiative to urgently investigate alternatives to CO2 for pre-slaughter stunning of pigs. There are serious concerns, based on robust scientific evidence, about the impact of CO2 stunning on pig welfare both amongst animal welfare experts and increasingly amongst the public too. Progress towards a more humane method has been too slow and the HSA would now hope to see rapid progress towards replacement of CO2, whilst acknowledging that significant practical challenges remain to be solved. The pig sector will play a pivotal role in defining these problems and finding solutions. We look forward to working with the industry and other stakeholders to ensure that progress is as rapid as possible.”*

## References

1. Farm Animal Welfare Council Report on the Welfare of Farmed Animals at Slaughter or Killing Part 2: White Meat Animals - [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/325241/FAWC\\_report\\_on\\_the\\_welfare\\_of\\_farmed\\_animals\\_at\\_slaughter\\_or\\_killing\\_part\\_one\\_red\\_meat\\_animals.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/325241/FAWC_report_on_the_welfare_of_farmed_animals_at_slaughter_or_killing_part_one_red_meat_animals.pdf)
2. Defra Project code: MH0154 - LAPS in pigs: a humane alternative to carbon dioxide? - <https://scienceresearch.defra.gov.uk/ProjectDetails?ProjectId=19805>
3. Raj, A. B. M., & Gregory, N. G. (1995). Welfare Implications of the Gas Stunning of Pigs 1. Determination of Aversion to the Initial Inhalation of Carbon Dioxide or Argon. *Animal Welfare*, 4(4), 273–280.
4. Raj, A. B. M., & Gregory, N. G. (1996). Welfare Implications of the Gas Stunning of Pigs 2. Stress of Induction of Anaesthesia. *Animal Welfare*, 5(1), 71-78.

## ENDS

### Notes to Editors:

The Humane Slaughter Association (HSA) is a UK-based, independent Charitable Incorporated Organisation (CIO). It is the only UK charity concerned exclusively in promoting the humane treatment of all food animals during transport, at market, slaughter, and killing for welfare reasons or disease control.

It works through research, education, training and promoting technical advances to bring real, practical and lasting improvements in food animal welfare.

The HSA is funded by voluntary donations, subscriptions and legacies. For more information about the HSA’s work email [info@hsa.org.uk](mailto:info@hsa.org.uk) or visit [www.hsa.org.uk](http://www.hsa.org.uk)

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