

Review of percussive stunning

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Project Description

The objective of this project was the completion of a review Of published scientific data and industry findings related to the use of non-penetrative percussive stunning overseas, to determine optimum stunning conditions for adaptation in Australia. The term 'Percussive stunning' is used to describe non-penetrating percussive stunning (also referred to as concussion stunning).

Project Content

Stunning is carried out to ensure that animals are unconscious at the time of exsanguination, so they do not feel pain and distress as a result of the exsanguination cut. Non-penetrating percussive stunning is used widely for stunning cattle in Australian abattoirs and when correctly executed, it induces a state of concussion during which the animal is unconscious. However, in the EU, non-penetrating percussive methods are not permitted for stunning livestock, with the exception of small ruminants (<10kg). The change to the EU regulation was based primarily on an EFSA report (2004), which cited a field study showing that non-penetrating stunning had a high failure rate under commercial conditions in two German cattle abattoirs. The literature review

The report also identified the key technical issues affecting the use of non-penetrating percussive stunning in Australia, by review of the audit information from the Animal Welfare Certification Scheme (AAWCS).

Project Outcome

The review identified key areas for future R&D to support the continued use of non-penetrating percussive stunning in Australia. This included:

- Further investigations into the interrelationships between animal factors and non-penetrating stunning equipment parameters, and the overall impact on stunning outcome should be undertaken. This can be combined with an evaluation of the performance of different stunning equipment (used commercially in Australia)

- Data on anatomical differences between animals of different breed, gender and age, should be collected and analysed and used to inform choices relating to cartridge strength, stun device characteristics and shot position.
- Without good restraint, consistent accurate placement of a non-penetrating percussive device is impossible. Although research into stun parameters is warranted, it needs to be combined with the use of good head restraint. It is therefore recommended that a review of restraint methods used in AAWCS certified abattoirs is undertaken.
- The negative welfare impacts of poor exsanguination, as they relate to possible recovery from a stun, have been identified through a number of research papers. The use of optimum exsanguination techniques in abattoirs using non-penetrating stunning needs to be investigated further.

Benefit for Industry

The majority of cattle processors in Australia use mechanical equipment (such as penetrative or non-penetrative concussion devices) as their primary stunning method. When correctly execute, non-penetrating percussive stunning induces a state of concussion during which the animal is unconscious. The project has demonstrated that in Australia the conditions under which non-penetrating stunning is used are somewhat different to those observed in some of the EU field surveys, with the use of controlled head restraint and high velocity pneumatic stunners commonplace. The recommendations from this study, include the need for further investigation into the effectiveness of restraint and application of appropriate stunning parameters in all AAWCS certified abattoirs, to ensure that optimum conditions for effective stunning are consistently applied.

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