

Stunning of water buffaloes under animal welfare conditions

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Key words

Bubalus bubalis, slaughtering, skull, anatomy, diagnostic imaging, ballistics, stunning device, concussion

Aims of the study

1) identify stunning methods currently being used; 2) assess brain lesions produced; 3) explain the failure of conventional stunning devices; 4) define physical requirements for adequate stunning; 5) design a specific stunning device 6) assess its suitability 7) elaborate tangible recommendations for amending applicable laws.

Material and methods

The survey included 22 questionnaires. A total of 35 heads were collected and analyzed by diagnostic imaging. Heads were further used for ballistic investigations. A novel bullet casing gun was developed and its effectiveness was assessed on 22 animals during regular slaughtering. Loss of consciousness was judged as based on 20 relevant criteria.

Results and significance

Anatomical specifics of water buffaloes preclude the use of conventional stunning devices. Thus, a broad range of weapons are currently being used in Swiss abattoirs. Based on the results from ballistic experiments, a novel bullet casing gun was built and tested during regular slaughtering. Usability and reliability were outstanding and all the criteria for complete loss of consciousness were fully met with the only exception of a ten year old bull. Legislation should stipulate the use of this newly developed bullet casing gun for the slaughtering of water buffaloes. For bulls older than eight years, however, other procedures such as stunning on a meadow with an adequate weapon should be considered. Conventional stunning of Yaks is unproblematic.

Publications, posters and presentations

Schwenk B, Lechner I, Glardon M, Ross S.G, Gascho D, Riva F, von Holzen A, Kneubühl BP, Stoffel MH (2014) Stunning of water buffaloes in Swiss slaughterhouses. EAVA-Congress, Cluj-Napoca, Romania

Schwenk B (2014) Assessment of different stunning methods used for water buffaloes by means of MRI and CT. Diss. med. vet., University of Bern

Schwenk B, Ross SG, Gascho D, Lechner I, Stoffel MH (subm.) Magnetic Resonance Imaging and Computer Tomography of Brain Lesions in Water Buffaloes and Cattle stunned with Handguns or Captive Bolts.

Schwenk B, Glardon M, Riva F, von Holzen A, Kneubühl BP, Stoffel MH (in preparation) Energy loss and impact of various stunning methods used for the slaughtering of water buffaloes.

Schwenk B, Lechner I, Glardon M, Ross S.G, Gascho D, Riva F, von Holzen A, Kneubühl BP, Stoffel MH (in preparation) Die Betäubung von Wasserbüffeln an Schweizer Schlachthöfen.

Meichtry C, Stoffel MH (2015, accepted) Tierschutzgerechte Betäubung von Wasserbüffeln - ein neuer Lösungsansatz. 56. Arbeitstagung des Arbeitsgebietes Lebensmittelhygiene der DVG, Garmisch, Austria

Meichtry C (2015) Assessment of a specifically developed bullet casing gun for the stunning of water buffaloes. Diss. med. vet., University of Bern

Meichtry C, et al. (in preparation) Assessment of a specifically developed bullet casing gun for the stunning of water buffaloes.

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