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Assessment of stun quality at commercial slaughter in cattle shot with captive bolt

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Abstract

Cattle may suffer pain and distress if incorrectly stunned. Regular monitoring of stun quality in abattoirs is now required by EU law. This study aimed to assess stun quality in cattle slaughtered under commercial conditions. A stun protocol was developed to evaluate when inadequate stunning occurred. This included rating of identified symptoms into three levels from highest to lowest risk for inferior animal welfare. Stun to stick interval times, shot accuracy, repeat shots, and stun quality variations between different cattle classes and by different shooters was also investigated. A total of 585 bulls and 413 other cattle classes (306 cows, 58 steers and 49 calves) were studied. Inadequate stunning occurred in 12.5% (16.7% of bulls, compared with 6.5% other cattle). Bulls displayed symptoms rated the highest level for inferior stun quality three times more frequently than other cattle. Despite being shot accurately, 13.6% bulls were inadequately stunned compared with 3.8% other cattle. Twelve percent of cattle were reshot, and 8% were inaccurately shot. Calves were shot inaccurately more frequently (14%) than other cattle. Percentage of cattle shot inaccurately ranged from 19% for the least experienced shooter to 5% for the most experienced. Stun to stick times averaged 105 (\pm 17) s posing questions for animal welfare, considering the number of cattle inadequately stunned. Stun quality could be improved by using more powerful stunners for shooting bulls, regular servicing of weapons, and use of neck restraints to improve shot accuracy. This study highlights the importance of external monitoring of stun quality at slaughter.

Keywords: animal welfare, audits, captive-bolt stunning, cattle welfare, commercial slaughter, stun quality assessment