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Identifying reasons for stun failures in slaughterhouses for cattle and pigs: a field study

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Abstract

Checking the effectiveness of stunning was one of the major tasks when the authors evaluated the stunning process on request of the slaughterhouse managements, retailers or competent authorities in slaughterhouses in Austria, Germany and Switzerland between the years 2000 and 2011. A total of 50 assessments in slaughterhouses for cattle and 116 for pigs were included in this study. For every assessment the technical features of the stunning device, the performance by the personnel and the clinical signs of the animals after stunning were recorded. The assessments of captive-bolt (CB) stunning were made in 1,823 cattle. For pigs, 63 assessments were carried out in electrical stunning (26 in a pen [ESP], 24 in a trap [EST] and 13 in an automatic restrainer [ESR]) and 53 assessments in CO_2 stunning, covering a total of 35,220 pigs (6,855 electrically stunned and 28,365 stunned using CO_2). The proportions of assessments in which there were no failures were 28% (CB), 12% (ESP), 21% (EST), 31% (ESR) and 13% (CO_2). The mean percentages of animals showing signs not compatible with sufficient depth of stunning were 13.5 (± 19.0)% (CB), 12.5 (± 16.4)% (ESP), 10.9 (± 11.4)% (EST), 3.2 (± 3.3)% (ESR) and 7.5 (± 13.0)% (CO_2) showing a high variability between premises assessed. Stunning effectiveness for cattle was better where a chest stick was performed compared to a neck cut. For pigs, less stunning failures occurred in electrical stunning where the two-cycle method (head/heart current) was applied compared to head-only stunning, and most of the failures in CO_2 stunning were due to insufficient dwell time. Reasons for the stunning failures are described and recommendations given to improve the situation.

Keywords: *animal welfare, captive-bolt stunning, cattle, CO_2 stunning, electrical stunning, pigs*