Improving sheep welfare at slaughter: feasibility of animal-based indicators to assess electrical stunning

Marta Comin[1], Sara Barbieri[1], Michela Minero[1], Emanuela Dalla Costa[1]*

[1]Università degli Studi di Milano, Dipartimento di Medicina Veterinaria e Scienze Animali, Milan, Italy

[*]Corresponding author: marta.comin@unimi.it

According to EU legislation on the killing of animals (EC n. 1099/2009), to ensure that animals do not regain consciousness before slaughter, operators are required to evaluate the efficiency of stunning method through animal-based indicators (ABMs). To assess the efficiency of stunning in sheep, EFSA (2021) has indicated a list of ABMs. However, information on their feasibility under different conditions (i.e., type of restrain and the distance between the animal and the assessor) is still lacking. The aim of this study was to evaluate the feasibility of 6 ABMs commonly applied in the slaughterhouses to assess proper stunning in sheep.

The ABMs feasibility was assessed during the normal slaughter routine, on 50 lambs (25-40 kg) between the end of stunning and shackling in one Italian slaughterhouse in one-day collection in December 2022. Lambs were manually restrained and stunned with head-only electrical method. One trained assessor, positioned between 1.5–3.0 meters from the stunning area, evaluated the possibility to observe of each ABM. Different feasibility aspects were considered: position and distance from the animal, access to the animal, time needed for the evaluation of ABM, environmental noises, and blind spots due to the presence of operators and movements during the shackling and hoisting.

The preliminary results showed that it was always possible to assess the tonic-clonic seizures and the vocalisations, whereas it was not possible to assess the corneal reflex due to the impossibility to directly access nor clearly see the eye of the lambs, and the breathing due to the presence of moving operators in the visual field. These constraints also influenced the assessment of spontaneous blinking in 94% of animals. The collapse was difficult to assess in 52% due to the restraining of the lambs, which were kept raised above the floor by one operator. No ABMs were affected by the time needed for the evaluation and the environmental noises.

In the considered abattoir, our preliminary results highlighted that feasibility constraints influenced the possibility to directly observe ABMs between the end of stunning and shackling. Breathing, posture and spontaneous blinking presented some observational limitations; further research including different slaughter contexts is suggested to improve the representativeness of the sample.