

# Leading sheep to slaughter: religious versus non-religious slaughter methods

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## Introduction

In most countries conventional slaughter of sheep requires either electric or captive bolt stunning prior to slaughter. However, there is an exception to this rule when considering slaughter of sheep in Jewish and Muslim religions, as pre-slaughter stunning is not performed (RSPCA, 2005; Stevenson, 1999). This has created an ongoing animal welfare debate over the various slaughter methods used. The following paper aims to review recent studies in slaughter methods which promote welfare of sheep.

## Discussion

According to the Farm Animal Welfare Council (FAWC), pre-slaughter stunning benefits an animal as it reduces stress endured from pre-slaughter handling and the induction of unconsciousness at the time of slaughter (Anil et al., 2004).

Jewish (Shechita) and Muslim (Halal) methods of slaughter require maximum bleed out after the slaughter of sheep for the meat to be religiously acceptable. Both methods sever the trachea, oesophagus, carotid arteries and jugular veins with a single incision. One main argument against pre-slaughter stunning according to Jewish and Muslim factions is that the stunning process can hinder blood loss, as stunning supposedly changes the muscular, neurological and cardiovascular status of the animal (Anil et al., 2004). Yet, recently in some Muslim abattoirs, stunning prior slaughter has become acceptable, though according to Muslim faith the animal is not to be killed before exsanguination (Grandin and Regenstein, 1994).

In a comparative study conducted by Anil et al. (2004) using two Muslim abattoirs, sixty sheep were allocated into three groups: slaughter by the Halal method of neck cutting only (n=30); head-only electrical stunning (n=18); and captive bolt stunning (n=12). The study aimed to find whether stunning adversely affected the bleed out rate and meat quality. For each carcass, the following measurements were recorded: pH at 45 minutes and 24 hours post-exsanguination; time taken to reach specific blood loss percentages; and meat colour. The data from both abattoirs was pooled via one-way analysis (ANOVA). There was a significant difference in the results of both pH variables. Animals stunned via captive bolt had higher muscle pH, compared with those that had no pre-slaughter stunning, while those animals electrically stunned had the lowest pH. A significant difference in the colour of the meat was also recorded between all three groups. Animals stunned electrically had the lightest meat, captive bolt stunned animals had the darkest meat and un-stunned sheep were in-between. No significant difference was observed in the time taken to reach a specific bleed out percentage.

Anil et al. (2004) were able to contradict Levinger's study (1995) and those who believed better exsanguination occurred when sheep were slaughtered without stunning. This was clear in their results showing that none of the three slaughter methods influenced the rate of total blood loss, (i.e. total bleed out of the animal); but that there was a slight tendency for better bleed out via electrical stunning.

Previous research into religious slaughter methods and animal welfare has indicated that the Halal method can cause severe pain to the animal when a small knife is used, as numerous attempts are made to sever all the vessels in the neck (Grandin and Regenstein, 1994; Grandin, 2004). This may reflect the lack of training for Halal slaughtermen compared to those who perform the Shechita method (Rosen, 2004). For Shechita to be performed, an animal must be healthy and capable of independent life, thus Shechita must be the only cause of the animal's death. For this reason pre-slaughter stunning is not accepted (Anil et

al., 2004; Rosen, 2004). In spite of this, Grandin (2004) demonstrated that when sheep are electrically stunned they can regain sensibility after a minute, and will start to ruminate within five minutes, consequently showing signs of a normal animal. This partially contradicts the Jewish belief that once stunned an animal is no longer capable of independent life.

Rosen (2004) explains physiological changes that occur after the Shechita incision, the heart beats for a few minutes thus enabling better exsanguination of sheep. However, as mentioned above, there is no distinct difference in exsanguination whether an animal is stunned or not (Anil et al., 2004). However, Rosen (2004) does make a good point, in that if Shechita is performed correctly sheep can lose consciousness within 15 seconds, which is the requirement for humane slaughter according to the RSPCA (2005).

Once an animal is slaughtered via Shechita the thorax is examined. If any imperfections are found the entire carcass is discarded. Nevertheless the carcass may be fit for consumption under regular meat hygiene laws and may be sold on the normal meat market, consequently more animals are subjected to religious slaughter than necessary (Stevenson, 1999). Imperfections to the carcass may occur because of handling post-slaughter. Coore et al. (2004) performed a study on four adult sheep to describe the changes in venous outflow due to postural changes after stunning and slaughter. The study was performed due to the possibility of captive bolt guns contaminating a carcass after stunning (Rosen, 2004) and also the risk of emboli forming from neural tissue. All four animals were anaesthetised and contrast medium injected. Radiographs were taken of the animals in recumbent and in hoisted positions. The results demonstrated that following captive bolt stunning, a recumbent animal is more likely to transport neural emboli, compared to one which is hoisted from tail to head. Coore et al. (2004) showed that lack of pre-slaughter stunning may benefit an animal slaughtered via Shechita, as there is decreased chance of carcass contamination, therefore decreasing the possibility of the carcass being discarded for failure to reach Jewish meat standards.

## Conclusion

Animal welfare issues will always surround the slaughter of animals whether via religious or non-religious methods. However, it is not possible to place a total ban on religious slaughter methods as this would affect human rights and the freedom of religious expression. To solve this debate, more research into pre-slaughter stunning could be performed, which may show a decrease in the time taken for sheep to be in pain and reach unconsciousness.

## References

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