



Acceptability of Electrical Stunning and Post-Cut Stunning Among Muslim Communities: A Possible Dialogue

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Abstract

Current technical-scientific advances allow a reappraisal of some practices used during religious slaughter without compromising its deep and essential meaning, through to the identification of techniques that limit the nonhuman animal vigilance without causing any lesion that may impair its integrity. All this in respect of religious principles of the Jewish and Muslim community and in respect of animal welfare, minimizing as much as possible the risk of causing useless suffering to the animals. A demonstrative slaughter was performed in a slaughterhouse of the Modena province (Italy): ritual incision of the neck vessels was preceded by stunning to explore the feasibility that lessening animal suffering could conform to religious prescriptions, as it does in other countries. Two alternative methods to classical ritual slaughter without prior stunning were illustrated in order to limit animal suffering during killing and comply with Islamic ritual requirements.

Keywords

Muslim communities, reversible stunning, post-cut stunning, ritual slaughter, Halal, dialogue

Introduction

Society's demand for the improved protection and welfare of nonhuman animals is increasing in importance throughout the world and is being expressed with greater force today, becoming a highly sensitive political issue (Appleby & Hughes, 1997; Ferrari & Bottoni, 2010; Seng & Laporte, 2005). Meat consumers are increasingly demanding that animals be reared, handled, transported, and slaughtered using humane practices, avoiding any unnecessary suffering (Appleby & Hughes, 1997). Religious slaughter has always been a

controversial and emotive subject: animal welfare considerations, human rights, freedom of religion, consumer rights, and market power are some of the issues involved (Evans, Eser, & Terragni, 2010).

Although legislation in European countries and other countries requires an animal to be rendered unconscious before he or she is slaughtered (pre-slaughter stunning), many countries have specific rules regarding religious slaughter and state that the legal requirement for stunning does not apply to the slaughter of animals by the Muslim and Jewish methods. Other countries such as Sweden, Denmark, Norway, and Switzerland do not grant the exceptions from stunning for halal and kosher slaughter; nevertheless, some religious authorities accept conventional stunning as being halal as long as the heart of the animal is still beating during sticking and bleeding (Berg & Jakobsson, 2007; Grandin, 2010).

New Zealand (the largest exporter of halal-slaughtered sheep meat and an important exporter of halal-slaughtered beef) supported research in the late 1970s to develop slaughter and stunning techniques that would meet both Muslim requirements and animal welfare concerns (Bergeaud-Blackler, 2007; Bonne & Verbeke, 2008). Religious slaughter has been performed in Europe for centuries alongside with conventional slaughter involving pre-slaughter stunning, and the objections to this practice from the welfare standpoint started in the nineteenth century (Evans et al., 2010). The debate about religious slaughter received particular attention in recent decades and has intensified with the concomitant increase in Muslim population in European countries (some European cities have a Muslim population of 10% or more), growing demand for ritually slaughtered meat, meat exports into the Middle and Far East and also consumer concerns and demands in both secular and Muslim groups (Anil & Lambooj, 2009; Bonne & Verbeke, 2008).

Muslims wish to observe dietary prescriptions for animal meat: the halal dietary laws determine which foods are "lawful" or permitted for Muslims. These laws are found in the Qur'an and the Sunnah, the practice of the prophet Muhammad, as recorded in the books of Hadith (the Traditions). Islamic law is referred to as Shari'ah and has been interpreted by Muslim scholars over the years. The basic principles of the Islamic laws remain definite and unaltered; however, their interpretation and application may change according to time, place, and circumstances (Regenstein, Chaudry, & Regenstein, 2003). Elaborate and detailed rules involving religious slaughter aim to rapidly induce unconsciousness and to avoid painful sensations until death occurs. In a similar manner, the best possible protection of animals at the time of killing is exactly the same goal for the occidental society, with the difference being that their method of slaughtering is completely secularized.

The sense of guilt following the act of killing any living being and offering an animal to the divinity to legitimize meat consumption is common in numerous cultures and religions. Slaughtering as a sacred ritual reduces feelings of guilt when killing an animal (Comitato Nazionale per la Bioetica. *Macellazioni Rituali e Sofferenza Animale*, 2005). Stunning was developed only in the late nineteenth century and was originally performed as a method of animal immobilization to allow easier and safer manipulation of the animal (especially for human handling of large animals) for efficient cutting of the blood vessels in the neck. In recent years, stunning has been viewed primarily from an animal welfare perspective as a means to minimize the pain and suffering associated with slaughter (Fletcher, 1999; Raj, 2006).

Religious slaughter methods date back more than 3,000 years. At that time, slaughter was performed under the most advanced rules from hygienic-sanitary and animal protection points of view. Indeed, healthier meats were obtained by a fast and complete bleeding. While great emphasis was placed on the sharpness of knife, the sticking method, and the special training of the slaughter man (illustrating how attention was paid to ensuring that animals were killed as efficiently as possible and giving them rapid deaths without unnecessarily suffering), animals were not considered to be sentient beings like they are today.

The major welfare issues during slaughter without stunning include the stress of handling and restraint prior to religious slaughter (Dunn, 1990; Grandin & Regenstein, 1994); whether the neck incision is painful during the cut and/or immediately afterward (Gibson, Johnson, Murrell, Chambers, et al., 2009; Gibson, Johnson, Murrell, Hulls, et al., 2009; Gibson et al., 2009a; Gibson et al., 2009b); and whether sensibility and consciousness were lost quickly enough following sticking (Anil, McKinstry, Gregory, Wotton, & Symonds, 1995; Anil, McKinstry, Wotton, & Gregory, 1995; Daly, Kallweit, & Ellendorf, 1998; Grandin & Regenstein, 1994; Rosen, 2004).

Perception of pain at sticking has been the subject of controversial debate within the scientific community. Based on scientific studies in this field, most researchers believe that properly done captive bolt and electrical stunning induce instantaneous insensibility (Gregory, 1998) and that slaughtering after animal stunning causes less pain than slaughtering with no previous stunning (Gibson et al., 2009b), while a minority of authors do not agree (Levinger, 1995; Rosen, 2004).

The Council Directive 74/577/EEC (1974) introduced the concept of stunning, defined as “a process effected by a mechanically operated instrument, electricity, or gas anesthesia without adverse effects on the condition of the meat or the offal, which when applied to an animal puts it into a state of

insensibility which lasts until it is slaughtered, thus sparing it in any event all needless suffering” (pp. 0010-0011). The European legislation is based on this assumption, and this is why stunning is compulsory despite a number of exceptions including religious slaughtering. Most European countries, including Italy, allow religious slaughter without previous stunning (provided that a number of legal requirements are met); some countries forbid religious slaughter without previous stunning, and others allow religious slaughter without previous stunning but prescribe post-cut stunning (Ferrari & Bottoni, 2010).

Without making a value judgment, “Dialogue on Religious Slaughter Project” (www.dialrel.eu) concluded that neck cutting without stunning poses the highest risk for animal welfare because restraining for the cut and during bleeding imposes extra manipulation on the animal. Additionally, pain, suffering, and distress during the cut and during bleeding are highly likely. Although stunning methods involve risks to animal welfare that have to be managed, stunning prior to neck cutting represents the lowest risk for overall compromise of animal welfare (von Holleben et al., 2010).

Grandin (2006) stated that, compared to slaughter with stunning, to conduct slaughter without stunning with an adequate level of welfare requires more skill and attention to the details of the procedure, and if the religious authority will accept stunning, stunning will usually improve animal welfare. The potential problem of sensibility during and after neck cutting could be minimized by the use of pre-slaughter electrical stunning, provided that this is correctly applied and is acceptable (Anil & Lambooj, 2009).

Religious Slaughter

The EU Council Regulation (EC) No 1099/2009 on the Protection of Animals at the Time of Killing, applied beginning in January 2013, replaces the Directive 93/119 and maintains the derogation from stunning animals prior to slaughter when prescribed by religious rites, leaving a certain level of subsidiarity to the Member States.

Stunning is defined as “any process which, when applied to an animal, causes immediate loss of consciousness which lasts until death” (EC Directive 93/119/EC, 1993, article 2, point 5). Therefore, stunning is a mandatory practice when slaughtering animals, and it must precede bleeding, performed by incision of at least one of the carotid arteries or the vessels from which they arise. According to European Union Council regulation (EC) No 1099/2009 (2009), permitted methods of stunning are:

1. penetrating captive bolt pistol;
2. non-penetrating captive bolt;
3. electronarcosis;
4. exposure to approved gas mixtures.

Muslim dhabiha and Jewish shechita are similar methods of slaughtering animals for food: animals must be alive and healthy at the time of slaughter and they must not have suffered any physical injury. Stunning has been opposed by those who believe that it leads to a reduction in the volume of blood that drains from the body after throat cutting and who are concerned that the stunning may kill the animal (Cenci-Goga, 2009; Cenci-Goga et al., 2010). As for the efficiency of bleed-out, research conducted on sheep and cattle shows that there is no significant difference in the rate of blood loss when the throat is cut with or without stunning (Anil et al., 2004; Anil et al., 2006).

The goal of stunning is to make the animal unconscious rather than to kill him or her; however, some methods (for instance electrical stunning methods where the electrodes span the heart as well as the brain) may induce cardiac arrest at the same time as loss of consciousness, and others, such as captive bolt, will lead to death at a later stage if the animals were not immediately bled.

Reversible electrical stunning does not injure the animal who is still alive when the throat is cut. Electrical currents applied on the head in sufficient quantity produce epilepsy (grand mal or seizure-like state), spreading across parts of the brain and stimulating other cells. This effect, characterized by rapid and extreme depolarization of the membrane potential and development of a synchronized electrical response, results in depression of electrical activity in pigs, sheep, and cattle that can be measured and observed on the recorded electroencephalogram (Anil & McKinstry, 1992; Lambooi, 1992). As human beings are known to become unconscious during epilepsy, the effect is also assumed to be similar in other mammals. Head-only electrical stunning, where the electrodes span the brain only, induces unconsciousness without stopping the heart from beating so that if the throat is not cut, the animal will recover completely from the stun. Moreover, correctly designed and applied percussion stunners do not cause skull damage (Anil & McKinstry, 1992; Cenci-Goga & Fermani, 2010; Cenci-Goga et al., 2010; Lambooi, 1992; Mellor, Gibson, & Johnson, 2009).

Is Derogation Acceptable?

Although there are historical examples of the Jewish community accepting pre-slaughter stunning (Berg, 2005; Endelman, 2002), the Jewish community seems united in opposing pre-slaughter stunning, while the Muslim community is divided on the question whether stunning should be allowed before halal slaughter. For example, a survey about the percentages of animals stunned for halal and kosher meat in the United Kingdom showed that the vast majority of animals (including poultry) slaughtered for halal meat in the United Kingdom are now stunned. However, all poultry and the majority of mammals slaughtered for Kosher meat are not stunned, and those that are, only receive the stun after the throat has been cut (stunning post-cut), which is done to avoid a prolonged state of consciousness in the animal (Animal Welfare Review, 2003).

More recent data collected by the European Union Dialrel project shows that, of the United Kingdom abattoirs surveyed, 100% of the animals and birds slaughtered for the production of kosher meat were not stunned. For halal meat in the United Kingdom, no poultry were slaughtered without stunning, while 25% of cattle and 7% of sheep were slaughtered without prior stunning (Cenci-Goga & Fermani, 2010).

According to Riaz and Chaudry (2004), stunning is preferably not used since the animal must be alive at the time of slaying and must die as a consequence of bleeding rather than as a consequence of stunning. Aldeeb Abu-Sahlieh (2001), however, emphasizes that Islamic dietary laws forbid consumption of blood and dead animals but do not prohibit stunning. Furthermore, encouraging humane handling prior to and during slaughter, and stunning that does not kill the animal, could be accepted as means for reducing suffering and meet the religious prescriptions. Religious scholars have written several fatwas (legal opinion concerning Islamic laws) that confirm Aldeeb Abu-Sahlieh's position regarding stunning. For instance, in 1987, the Egyptian fatwa commission stated that stunning is permitted when it is used to reduce suffering during slaughter without causing the death of the animal (Bonne & Verbeke, 2008).

Some religious authorities accept the stunning prior to the neck cutting. For instance, in Malaysia, a country where most people are Muslims, stunning animals prior to slaughter is permitted in accordance with some requirements: for mechanical stunning, the skull of the animal should be checked for permanent injury. If the skull is found to have been penetrated or broken, the carcass should be identified as non-halal and should be separated from halal carcasses (Comitato Nazionale per la Bioetica. *Macellazioni Rituali e Sofferenza Animale*, 2005).

In his book, *Animals in Islam*, the first Sunni Imam of the Shah Jehan Mosque in Woking (England) wrote that the modern apparatus and techniques of slaughter, including stunners, cause no impediment to the normal flow of blood, which is the most important hygienic requirement of the Islamic laws of slaughter. At the same time they, do mitigate the pain and grief of the animal, and in the spirit of the Islamic teachings, the use of such aids and techniques is not merely a matter of choice and preference but it is a moral imperative and religious obligation. Refusal to use them and not to spare the animal avoidable pain is, without doubt, a sin of omission (Al-Hafiz, 1989, pp. 88-90).

In 2004, Masood Khawaja, president of the Halal Food Authority, stated that stunning is acceptable as long as the animal is not dead prior to slaughter, all flowing blood has been drained, and a Muslim has done the ritual slaughter (Treatment of Animals. Islam and Animals, 2009).

Dialogue with Muslim Community

In an attempt to explore the acceptability of certain modifications to the procedure for halal slaughter and to stimulate the debate in the field of religious slaughter, we selected the Reggio Emilia province for several logistical and demographical reasons.

First, the Reggio Emilia Public Health Department (PHD) has implemented an action plan specifically addressed to the Muslim population living in Emilia Romagna Region (ERR), in collaboration with the ERR Veterinary Service and with National Centre for Animal Welfare. Two establishments authorized to perform ritual slaughter currently operate in the Reggio Emilia province, one in the Rio Saliceto municipality and the other in Correggio.

Second, a large proportion of people coming from non-European Union member countries and living in Italy belongs to the Muslim faith, currently the second most popular religion in Italy, which is a considerable number of immigrants and their descendants, second and third generation, born and raised in Italy (Caritas/Migrantes, 2009). The foreign population living in the Reggio Emilia province is quite substantial, amounting to 52,672 non-European Union citizens (10.1% of the total resident population) and 6,752 European Union citizens (1.3%; December 31, 2008). Reggio Emilia ranks as the second largest province of the ERR and the fourth largest Italian province—following Brescia, Prato, and Piacenza—for the proportion of foreign citizens in the resident population (Provincia Reggio Emilia—Osservatorio Sulla Popolazione Straniera, 2009).

Finally, people coming from 141 nations live in the Reggio Emilia province. The highest represented nations are the following: Morocco (25.4% of all foreign citizens), Albania (15.7% of all foreign citizens), India (11.4% of all foreign citizens), China (9% of all foreign citizens), and Romania (7.5% of all foreign citizens) (Popolazione Straniera Residente nella Regione Emilia-Romagna al 31.12.2008, 2009).

Usually, there is a direct correlation between health condition and access to the health services; immigrants' access to health is sporadic and unpredictable due to the scarce knowledge of preventive medicine in their native countries; the PHD is, therefore, actively engaged in diffusing its prevention activities in order to increase the access rate to the health services (Drewnowski & Specter, 2004).

The analysis of immigrants' health conditions has shown some major problems: a growing incidence of scabies and tuberculosis, little access to the health services (provided free to the community), noncompliance not only with the safety requirements in the work place, but also with the hygiene requirements during slaughter and all the stages of food production (from the early preparation stages to distribution). The PHD policy for these major problems is based on consumer education and on the continuous application of preventive measures.

One difficulty in applying the modern concepts of food safety, especially as far as prevention is concerned, is due to the strong food traditions of most immigrants, as the religious component is a major characteristic; this has brought about an increase in the production and sale of traditional foods (also called ethnic foods). As far as Muslims are concerned, Islamic centers play a large role; they provide a wide, articulated support network to Muslim citizens (for instance with the regular implementation of Arab language and Islamic culture courses), and they also interact with the local communities to sustain and develop food services delivered according to the Islamic law, particularly meats produced according to the rules of Islamic ritual slaughter (Campagnolo & Perocco, 2002).

Demonstrative Stage On-Site for Stunning

In 2007, a process of consultation with representatives of the Islamic religious communities at the regional level was implemented. The aim was to reach a formal agreement concerning the slaughtering practices to be adopted in the ERR abattoirs in order to comply with food safety and the religious requirements of the Islamic and Jewish communities, and to limit the trauma from the incision of the neck vessels in a conscious animal as much as possible.

A slaughter presentation was performed in a slaughterhouse of the Modena province: ritual incision of the neck vessels was preceded by stunning to explore the feasibility that lessening animal suffering could conform to religious prescriptions, as it does in other countries.

These “educational” slaughters were organized by ERR and implemented by the Veterinary Services operating in adjoining provinces (Bologna, Modena, and Reggio Emilia). The religious authorities of the Bologna, Modena, and Reggio Emilia provinces were invited to this event. The following representatives of the Reggio Emilia province were present: Correggio Islamic Culture Arab Association, Novellara Culture Arab Association, Reggio Emilia Moroccan Immigrants Association, Reggio Emilia Islamic Culture House, Reggio Emilia Mosque Islamic Centre, Montecchio Egyptian Community, and the Reggio Emilia Islamic Community Cultural Centre.

In Italy, there are several Islamic associations (the most prominent are UCOII-Unione delle Comunità Islamiche d'Italia and CCII-Centro Culturale Islamico d'Italia), but there are not many prominent Muslim scholars, so many members of Islamic communities rely on foreign scholars. As for the requirements about religious slaughter, we followed the prescription suggested by the religious authorities that participated in the project.

Two alternatives to classical ritual slaughter without prior stunning were illustrated in order to show how to limit animal suffering during killing and to comply with Islamic ritual requirements.

Electronarcosis Prior to Slaughter

Electronarcosis applied only to the head using electrical tongs is a reversible event; it does not result in any anatomical alteration and does not modify the integrity of the animal. Immediately after the ritual incision of the neck, the thoracic vessels are incised to quicken bleeding.

This method requires two operators, however; the first performs the electronarcosis and the other must perform slaughter as quickly as possible. Loss of sensibility in cattle lasts between 31 and 90 s from the electronarcosis, after which the animals regain consciousness. Despite this fairly ample interval, the animal could regain consciousness and suffer before slaughter has been completed. So, it was agreed to also carry out the incision of the sternal vessels in order to quicken the bleeding.

Stunning by Captive Bolt Immediately After Incision of the Neck Vessels

The captive bolt method complies with ritual slaughter rules, as the animal's wholeness is not affected prior to slaughter.

Two operators must be present; the first one performs the slaughter and the other stuns the animal as quickly as possible. Animal suffering would be limited to the neck incision only, the extent of which should, in any case, be negligible when stunning follows the incision immediately.

The demonstrative stage showed that electronarcosis prior to sticking produces instantaneous loss of consciousness without adversely affecting the integrity of the animal and is completely reversible; that is, if sticking is not performed, the animal regains the vital functions within 1 to 1.5 min. After this demonstrative stage on-site, the local Solidarity Office organized a series of meetings to discuss the issues regarding ritual slaughter. Participation at the meetings was considerable.

In addition to the head of the Reggio Emilia Solidarity Office, PHD representatives were also present, together with representatives of the animal protection associations, the Islamic immigrants associations, the ERR Veterinary Services, and of the National Centre for Animal Welfare. All the participants acknowledged the need not only to respect the ritual practices and to promote their inclusion within the legal realm concerning food production, but also to safeguard the health of the Islamic people when handling animals during slaughter and of their families when consuming the products of the ritual slaughter, as well as the safeguard animal welfare during transport and slaughter. The alternative slaughter techniques previously mentioned were discussed further with the parties involved, who showed interest in these proposals.

Local Initiatives Regarding Ritual Slaughter and Results

Ritual sheep slaughter occurs most frequently during the Sacrifice of Abraham (Id al-Kabir), which falls on the 70th day after the end of Ramadan. Sheep are slaughtered in such numbers as to raise attention and concern not only among the local health and political institutions, but also among the animal protection organizations in countries where religious slaughter is not predominant. During recent years, the Id al-Kabir celebration sometimes gave rise to strong disapproval within the local non-Muslim community, which was due to matters of public order, especially when considering past frequent irregularities detected by different control authorities. Critics were influenced by some animal activist movements against ritual slaughter practice, as it was considered to conflict with the basic animal welfare principles established by the European Union and the national legislation, and also largely acknowledged by large sectors of Italian society.

The Reggio Emilia Veterinary Service has developed several initiatives regarding ritual slaughter: provincial guidelines, multilingual brochures, and official

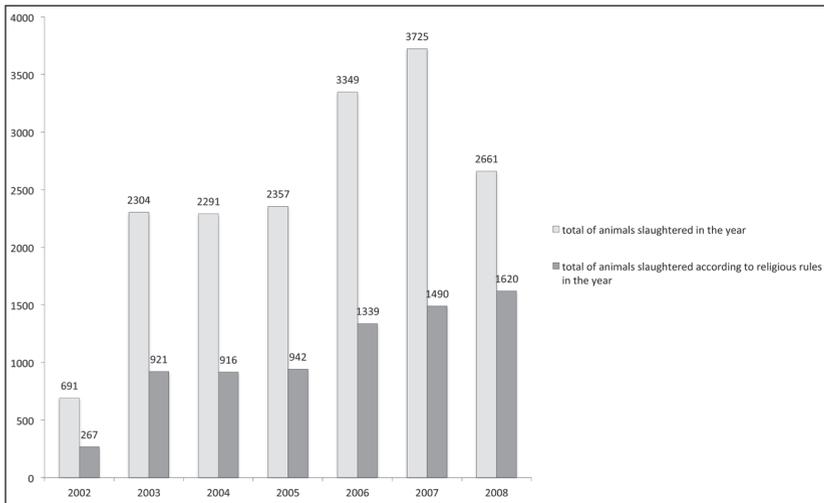


Figure 1. Total animals (small ruminants and cattle) slaughtered at abattoirs in Reggio Emilia province (Italy) from 2002 to 2008, and total slaughtered according to religious rules.

meetings with the leaders of the local religious communities. All these initiatives have made the Muslim leaders increasingly aware of their legal duties. They have become thoroughly acquainted with the current food safety legislation and have induced the Muslim community to comply with legal requirements when slaughtering animals. The purchase and sale of animals, farming, and transport have also been affected.

The Veterinary Service personnel are available to perform their inspection and control duties during the celebration day, even when it falls on a bank holiday. The slaughter trend has continuously increased since 2004, with a marked peak registered in 2008 with special attention paid to the stunning of animals prior to slaughter, particularly cattle (Figure 1 and Figure 2).

The following factors have probably played major roles in the increasing awareness regarding the need to use authorized slaughterhouses in the Reggio Emilia Islamic population:

1. the acknowledgement of an increased need for food safety for their families, especially regarding women and young children;
2. the purchase of healthy animals from registered farms under veterinary control;
3. the perception of the potential risk of illness due to contact with sick animals during ritual slaughter performed at home;

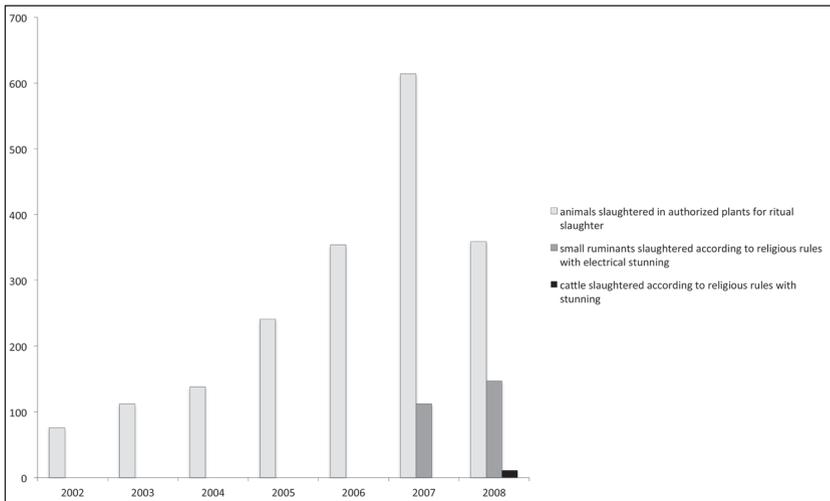


Figure 2. Total animals slaughtered in authorized plants for ritual slaughter (small ruminants and cattle), and number of animals slaughtered with previous stunning in Reggio Emilia province (Italy) from 2002 to 2008.

4. attention toward the sensitivity of their Italian neighbors, given that Islamic immigrants wish to maintain friendly relations;
5. awareness of the risk of environmental contamination as a result of the disposal of post-slaughter waste; and
6. awareness of the sensitivity of the Italians concerning slaughter without stunning, which results in an often quite harsh, direct clash with the local and national animal protection movements.

Currently, the supply of sheep and goat meat complying with Islamic law requirements is guaranteed in the Reggio Emilia province throughout the year thanks to the two authorized abattoirs operating locally. Another five slaughterhouses have said they are willing to host ritual slaughter during the three days of the religious feast; they request stunning by electronarcosis or captive bolt. This experiment was carried out for the first time on sheep and goats in the Reggio Emilia province in 2007, and a marked increase of the number of animals stunned prior to slaughter was recorded the following year. Moreover, in the same year, stunning prior to slaughter was applied to cattle for the first time.

Seven out of 13 abattoirs currently operating on the Reggio Emilia territory have declared their availability to guarantee slaughter service to the Islamic

community, although not all perform slaughter under the same conditions. This concurs with the current policy to have all the local abattoirs working during public holidays, so that all Islamic citizens have access to the nearest abattoir and the only two slaughterhouses currently operating would not be overworked. No other alternative exists: the current legislation does allow for the possibility of not stunning the animals, but it does not allow ritual slaughter outside the slaughterhouses.

In 2010, Italy registered the Halal Italy trademark in order to certify the compliance with Islamic religious requirements for food and agricultural products, cosmetics, and pharmaceuticals. In the guidelines on the slaughtering of animals for halal meat produced by the Certification Ethics Committee of CO.RE.IS. Italy (Islamic religious community), stunning is taken into consideration: “the animals must be alive at the moment of sticking, even if is stunned” (Comunità Religiosa Islamica Italiana (CO.RE.IS). *Disciplinare Tecnico per la Certificazione di Conformità Halal dei Prodotti Alimentari*, 2009). This last point is very important because it represents openness toward methods of stunning that do not lead to death and do not injure the animal prior to bleeding.

Conclusion

The potential risk for an animal to be conscious after sticking is a welfare issue (Cenci-Goga et al., 2010), increasing the need to encourage the use of stunning for religious slaughter where religious communities can accept it. New stunning methods are regularly developed and proposed for the market in order to face the new challenges of the farming and meat industries, and scientific and technical progress is regularly made with regard to the handling and restraining of animals at slaughterhouses (Council Regulation (EC) No 1099/2009 of 24 September 2009 on the Protection of Animals at the Time of Killing, 2009).

Current technical-scientific advances allow a reappraisal of some practices used during religious slaughter without compromising its deep and essential meaning, which include identification of techniques that limit the animal's vigilance without causing any lesion that may impair his or her integrity. All of this is done with respect for the religious principles of the Jewish and Muslim communities and animal welfare, minimizing as much as possible the risk of causing unnecessary suffering for the animals.

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