

THE USAGE OF THORACIC STICKING METHOD IN HALAL SLAUGHTERING PROCESS

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ABSTRACT

Halal slaughtering is part of total halal integrity system. It laid the basic foundation in Muslim dietary rules. The needs for a better quality meat product lead to modernization in slaughtering process and techniques namely thoracic sticking. Thoracic sticking is the process of hastening the bleeding process by inserting metal blade through the cutting incision, severing the jugular and carotid at the heart. Proponents of these techniques say that it has several advantages such as an increase in meat quality and hastening the bleeding process, while others deemed it as unlawful and haram due to nature, where the animal dies due to the bleeding process at other location than the prescribe places. Decreed issued by The Malaysian National Fatwa Council considered that thoracic sticking is allowed in the halal cattle slaughtering. Extensive documents analysis of previous literature using Key Words in Context (KWIC) and Word list method are used to classify the issues into two emerging themes, which is thoracic sticking-meat quality and Shariah compliances-thoracic sticking. This paper will discuss the issues of using thoracic sticking from the perspective of Shariah as well as the science of slaughtering.

Keywords: *Thoracic Sticking, Halal Slaughtering, Shariah, Meat Quality*

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PENGGUNAAN KAEDAH ‘*THORACIC STICKING*’ PADA PROSES PENYEMBELIHAN HALAL

ABSTRAK

Penyembelihan halal adalah sebahagian daripada sistem integriti halal. Ia meletakkan dasar asas dalam peraturan diet Islam. Keperluan untuk menghasilkan produk daging yang lebih berkualiti membawa kepada pemodenan dalam proses penyembelihan dan teknik-teknik seperti *Thoracic sticking*. *Thoracic sticking* adalah proses mempercepat proses pendarahan dengan memasukkan pisau pada lokasi insisi untuk memotong vena jugular dan salur darah karotid pada hati. Penyokong teknik ini mengatakan bahawa ia mempunyai beberapa kelebihan seperti peningkatan mutu daging dan mempercepatkan proses pendarahan, sementara yang lain menganggapnya sebagai haram di mana haiwan itu mati akibat proses pendarahan tidak di lokasi yang telah ditentukan dalam Islam. Kenyataan yang dikeluarkan oleh Majlis Fatwa Kebangsaan Malaysia menganggap bahawa *Thoracic sticking* dibenarkan dalam penyembelihan lembu halal. Analisis dokumen yang meluas penulisan terdahulu menggunakan kaedah Kata Kunci Kata (KWIC) dan kaedah senarai perkataan digunakan untuk mengklasifikasikan isu-isu tersebut iaitu kualiti daging *Thoracic sticking* dan patuh Syariah. Penulisan ini akan membincangkan isu-isu menggunakan *Thoracic sticking* dari perspektif Syariah serta ilmu penyembelihan.

Kata Kunci: *Thoracic Sticking, penyembelihan halal, syariah, kualiti daging*

INTRODUCTION

To seek halal is obligatory to every practicing Muslim. Whenever possible halal should be sought to a certain condition called “*darurah*” is necessary. Not only limited to food, the halal concept applies to another aspect of life, “*ad-Din*” but this particular paper will be focusing on the concept of Halalan Toyyiban, the permissibility of food. The misconception about halal, even though it is obligatory in Islam, it is also somewhat disturbing due to the lack of education, disinformation, and plain ignorance.

Halalan Toyyiban denotes permissibility of things and wholesomeness according to the tenets and pillar of Islam. Halal rules were prescribed in The Quran in numerous chapters, essentially cover what could be eaten and cannot be eaten. Furthermore, the said material must also say to be safe and does not pose any danger to the society.

The opposite of halal is Haram or non-halal. Simply put, it carries the stigma of unlawful, forbidden or prohibited to be consumed under the Shariah law. Between these halal and haram, there is a gray area known as Syubhah, the terms that represent in between halal and haram. For something to be called Syubhah, it does not fall clearly under the halal or haram, there questionable and dubious. In this category, until the status becomes clear, Muslims should avoid consuming Syubhah food or drinks. As per statute and legislative point of view, according to the Malaysian Halal standards MS1500:2009 guidelines, Halal food mean food and drink and/or their ingredients permitted under the Shariah law and fulfill the following conditions, among others animals that are slaughtered according to the Islamic rites (Department of Standards Malaysia, 2009). As a follower of Islamic teaching, it is imperative that Muslims to observe the teaching as stated in the Holy Quran and Sunnah. Every Muslim must have the knowledge and information in relation to halal as it is one of the major facets of Islamic teaching. Living in a Muslim country such as Malaysia, halal food should be easy to find and haram risk should not even occur. On the contrary, 40 % of its population is non-Muslim; consequently, the risk of haram food is quite alarming. One of the reasons for halal is mainly to set a differentiation between Muslim and non-Muslim. Halal related issues are most often highlighted in the media, associated with food and consumer products. Among other, abuses of the Halal logo to sell non-halal food and contamination of non-halal food in consumer products. The scale of the halal markets domestically and globally is extensive. It is estimated that the halal market alone in Malaysia is worth around RM 29 billion (Ministry of International Trade and Industry (MITI, 2013).

Halal slaughtering plays a vital and significant role in the overall halal system. This is where the point of the halal system begins for certain kinds of food such as meat and poultry products. As prescribe in the teaching of Islam, slaughtering is not just to cleanse the animal from its blood, it also signify the purification of materials (Istihalah) from haram to halal. For the purpose of this review, extensive literature review and documents analysis will be conducted to studies and analyzed the underlying issues and concern regarding thoracic sticking in halal slaughtering.

LITERATURE REVIEW

Various reports and studies conducted by academician and industries player reveal much on the science of slaughtering. The nature of slaughtering is mainly to kill the animals. Since there are many versions of slaughtering method, the most widely accepted definition of slaughtering is exsanguination of animal terminally to caused death. Prior to these process, some method of stunning were applied to ensure the slaughtering process run smoothly.

During this process major blood loss will lead to suffocation of the animals, reducing the animal's oxygen intake thus rendering the brain unconscious. The process of slaughtering is above all to exclude as much as possible the amount of blood in the muscle tissues before consumption. In meat processing, blood is often regarded as one agent that could deteriorate the meat quality within a short time period (Bourbab & Idaomar, 2012). Blood also contributed to the spoilage, gamey flavors, and discoloration of meat (Aalhus, 1995). Table 1 and Table 2 define some of the keywords associated with conventional slaughtering, as well as slaughtering method prescribed in Islam.

Table 1: Words and Process Associated with Exsanguination of Animal (Chambers *et al.*, 2001; Rizyan, 2011).

Keyword	Definition
Slaughtering	The process of the severing of major blood vessels in the transverse incision and releasing of blood.
Neck sticking	Refer to the procedure for making an incision in the neck area of the animal. Its main purpose is to kill the animal. Animal bleed out is not a major concern as long as the animal dies from the procedures.
Thoracic Sticking	Normal slaughtering procedure is conducted by making a cut in the jugular crease at the base of the animal's neck, followed by making an incision with the knife-point at the base of the breastbone and pointed towards the chest; insert the knife to sever the major blood vessels coming from the heart.
Chest Stick	The chest stick is performed near the heart but is not widely practiced due to the contamination of the fleece with blood. Most common in New Zealand

Table 2: Slaughtering Methods in Islam (Jais, 2011).

Methods	Defination
Al-Zabh	Slaughtering by cutting at the trachea (halqum) for animal such cows and sheep.
Al-Nahr	Slaughtering by severing the Labbah (bottom end of the long neck) for an animal with long necks such as camel and ostrich.
Al-'Aqru	Slaughtering by inflicting wound at any parts of the animal bodies provided there is sufficient blood flow out from the wound.
At-Tazkiah	Slaughtering at the halqum or Labbah if the animal can be subdued and control or with al-'aqru methods if the animal cannot be controlled.

Thoracic sticking a post-slaughtering procedure, done primarily to further bleed out the animal from most the residual blood according to the National Animal Welfare Advisory Committee (2010) of New Zealand, thoracic sticking are defined as “A thoracic sticking, which severs the large blood vessels that give rise to the jugular veins and carotid arteries.

This method of slaughter is achieved by running a knife down one jugular furrow of the neck and then into the opening of the chest between the first pair of ribs. A successful incision is denoted by an obvious gush of blood, both venous and arterial as shown in Figure 1. Thoracic sticking was also known as “chest stick” in some part of the world. These procedures are mainly used in Australia and New Zealand (Anil, 2011).

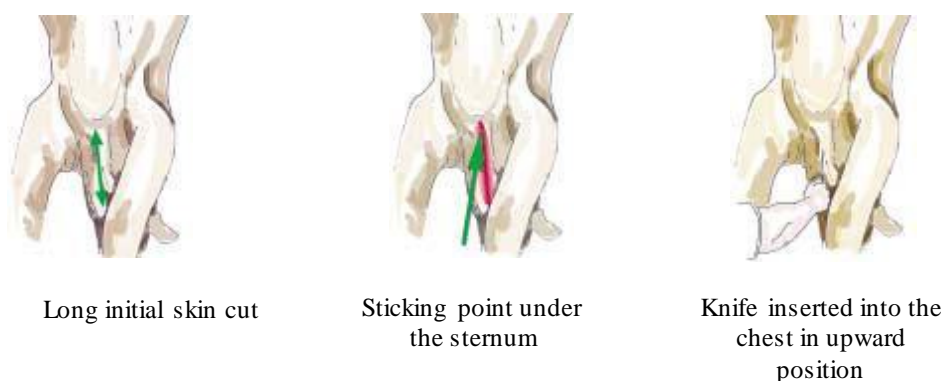


Figure 1: The Process of Thoracic Sticking on Cattle (Chambers *et al.*, 2001)

The reason for this procedure was invented in the first place was to hasten the time of death for the animal and shorten the prolonged consciousness level of the animal after slaughtering and increase meat quality level after removal of most of the blood from the body (Anil, 2011). The average time for an animal to fully in the state of unconsciousness is between 5 to 6 minutes for an adult steer and 4 to 5 minutes for calves (Awis, n.d.). Islam has specified that land animals, which are deemed halal to be eaten, must go through the slaughtering process. In layman terms, slaughtering means cutting and making an incision at the neck of the animal to bleed out the blood and killed the animal swiftly (Department of Standards Malaysia, 2009).

The main purpose of slaughtering is to bleed as much as possible the amount of blood from the body during exsanguination. A different method of slaughtering will affect the volume of blood loss and dramatically reduced after the heart stops functioning. At this point on 40 to 60 percent of the blood is drained from the carcass.

Most of the retained blood in the carcass is located in the viscera rather than the meat itself. It is estimated that the residual blood content for a typically slaughtered animal (Bovine) is around 2 to 9 ml/kg of body weight. Studies on the residual blood retained in the meat show that there is no significance influence on the meat microbiology (Warriss, 1984). Table 3 shows the matrix literature review and key finding related to slaughtering.

Table 3: Matrix of literature review and key findings.

References	Research Areas
Chambers et al., (2001)	Humane handling, transfer and slaughtering of livestock
Addeen et al., (2014); Adzitey (2011); Ali et al., (2011)	Slaughtering and meat quality
Food Science Australia (2003)	Thoracic sticking and meat quality
Pleiter, (2010)	Stunning and halal slaughtering
Food Science Australia, (2003)	Slaughtering Technology
Addeen et al., (2014); Adzitey, (2011); Ali et al., (2011); Anil et al., (1995); Farouk et al., (2014)	Pre and Post treatment of animal prior to slaughtering
Zulkifli et al., (2014)	Stunning, Thoracic sticking on meat quality

In Islamic teaching, the welfare of the animal must be taken into consideration when handling and preparing the animal for slaughtering. The religious motivation for this is that the animals are considered as a creature of Allah, serving is purposes for the benefits of mankind, therefore, should be respected accordingly. Scientifically, mistreatment of the animal before and after slaughtering will affect the quality of the meat. Even if the animal is brought up properly, mistreatment during their last day prior to slaughtering will affect their body weight, meat quality and eventually reduce the profit. (Addeen et al., 2014; Adzitey, 2011; Ali et al., 2011; Anil et al., 1995; Farouk et al., 2014).

METHODOLOGY

The qualitative method of research is the most suitable for this paper since, its main purposes are to paint the fundamental concerns in relation with thoracic sticking (Creswell, 2003; Ryan and Bernard, 2003). For the purposes of this paper, an extensive review of literature is conducted, and key critical terms are classified into several themes.

Previous literature on the issues of thoracic sticking is first gathered from several sources which includes books, industry bulletin, academic paper, articles as well as observational through social media and the internet.

For each article and paper, primary theme and subtheme are first identified. Key Words in Context (KWIC) as well as Word List techniques are used to gather simple observation on the theme and sub-theme in the literature (Ryan and Bernard, 2003). For each, literature, a unique word, which related to the areas such as “thoracic sticking”, “Meat quality”, “exsanguination”, “blood loss”, “Halal Slaughtering”, “Concerns”, “*Syubhah*” and few other words were found to be used extensively. All the themes and sub-themes are then evaluated and reduced to a small pool, clustered together between theme and sub-theme. It is later classified hierarchically and according to its importance and numbers of occurrence.

DISCUSSION

Document and literature reviewed review on the subject matter of halal slaughtering and thoracic sticking have discovered evidence where there are two emerging themes on thoracic sticking issues, which are thoracic sticking and meat quality as well as Shariah concerns of thoracic sticking in halal slaughtering.

Effect of Thoracic Sticking On Meat Quality

When discussing the topics of meat quality, two major criterions on measuring quality meats, are often taken into consideration, which are the tenderness, juiciness & flavor as well as keeping quality (Farouk et al., 2014; Sabow et al., 2015; Velarde et al., 2003). There are a lot of variables contributed to the tenderness and keeping quality such as animal stress during the pre-slaughtering and slaughtering process and also post-slaughtered treatment on the carcass. The effect of thoracic sticking towards meat quality is often associated with the rate and volume of blood loss during slaughtering. The higher the amounts of blood loss during slaughtering are better in terms of meat quality. In a report published in 2014 by the Commonwealth Scientific and Industrial Research Organization (CSIRO) indicates that thoracic sticking does improve the meat quality (Zulkifli et al., 2014). Recent findings also indicate that imperfectly bleed out animal during exsanguination has the higher tendency to spoil even faster as compared to perfectly bleed out animals, due to the rapid decomposition of meat qualities (Addeen et al., 2014).

A study conducted by Bourbab (2012) on poultry slaughtering also indicates similar results where the bacterial count on properly slaughtered animals shown a minimal growth as compared to improperly slaughtered

chicken. The higher the amount of blood retained in the meat after slaughtering, exponentially increased the higher risk of contamination in the carcasses. Haem iron and Fe count in the meat also found to be lower than improper bleed out animals (Addeen et al., 2014). Having said that, the main purpose of thoracic sticking is to bleed as much as possible the amount of blood from the animal carcasses. By using thoracic sticking procedure, maximum blood drainage will be achieved. Halal slaughtering procedure usually bleeds 40 to 60 % of the total blood volume from the carcass. With the application of thoracic sticking, another 12 to 20 % more blood will be drained from the carcass (Food Science Australia, 2003).

Thoracic sticking is relevant to the modern slaughtering method due to its nature. Blood loss during exsanguination is eminent and further blood loss also detrimental in determining the quality of the meat. For the time being, there is no other alternatives procedure, apart from the use of gravity, which could replace thoracic sticking in terms of promoting further blood loss during animal slaughtering (National Animal Welfare Advisory Committee, 2010). It can be summarized that blood loss in slaughtering has a significant impact towards the total overall quality of the meat. The process of exsanguination itself is a preferred method to bleed out as much as possible the blood count from the body of the animal. Whether it's a halal or non-halal slaughtering, the main focus is still the same. Most commercial slaughter houses prefer the slaughtering process in which major blood vessel and veins are severed, followed by thoracic sticking. Thoracic sticking in an essence is a technique to further bleed out the animal, hastening its dying process.

Shariah and Thoracic Sticking in Halal Slaughtering

The Special Conference (*Muzakarah*) of the National Fatwa Council of held on 29th September 2005 as discussed the Thoracic Sticking method in the slaughtering of animals. The Conference decided that the Thoracic Sticking method, an additional procedure after slaughtering an animal, is permitted and its meat is lawful (halal) with the following conditions: which is [a] The slaughter is complete by severing the four major vessels: the windpipe (trachea), gullet (esophagus) and two jugular veins, [b] The Thoracic Sticking method is performed only after complete bleeding or 30 seconds after the slaughter [c] The animal died because of the slaughtering and the Thoracic Sticking method only functions to speed up the death.

The Fatwa came about, due to concerns of the Muslims regarding thoracic sticking that are widely used in the cattle industry, notably in Australia and New Zealand. The issues were highlighted after routine halal certification inspection conducted by the Department of Islamic Development (JAKIM) in meat processing plant in Australia.

The main issues whether the animal dies due the halal slaughtering or resulted from the thoracic sticking itself. At a point, the uses of thoracic sticking were controversial dues to limited research and studies conducted on the procedure and invoked the sense of doubtful (*Syubhah*) among the Muslim community.

Further and extensive studies conducted by academician and industry player indicated that this procedure did not sacrileges the sanctity of the halal code. Findings corroborate that the animal was indeed unconscious and cardiac rhythm was almost unnoticeable on electroencephalogram (EEG) due to the massive blood loss during the initial exsanguination and thoracic sticking further accelerate blood loss to a maximum (Australia Meat & livestock, 2011). Thoracic sticking if conducted properly as prescribed in the fatwa should not be an issue to Muslims. The research also conclusively suggested that thoracic sticking did not play a major role in the hastening the disappearance of vital sign and reflexes. Scientific research conducted by CSIRO found that thoracic sticking did little to shorten the terminal time, according to the waveform in EEG to achieve the lowest reading accompanied by the absence of a vital sign. It is also suggested that thoracic sticking accelerate the suppression of brain activities, rendering the animals into a deep state of unconsciousness (Australia Meat & livestock, 2011). It can be concluded that the animal has been in the terminal state of consciousness from the slaughtering process, and the heart beat movement is involuntary, triggered by an impulse from the brain and the process of rigor mortis.

This genuine concern among Muslim is ingrained in the concept of objective of Shariah (Maqasid As- Shariah) and greater goods of the community (Maslahah). Food is deemed as the causal of things which mean, it affect the bodily and spiritual functions of a Muslim. These concerns over whether the animal dies due to the slaughtering at the neck or from the thoracic sticking procedure spooks the community at large. Clarification from religious authority has clear up the issue and with proper education directed towards the community awareness. Nevertheless, the procedure may look proper on paper, but on the implementation side, it needs to be checked thoroughly. It is imperatives that this procedure to be conducted under strict supervision in order to maintain the halal integrity system reliability, and trustworthiness.

CONCLUSION

In line with the decree issued by the National Fatwa Council of Malaysia, thoracic sticking is allowed to be used as long as it conforms to the Shariah law. Contingencies and precautionary measures during slaughtering and the usage of thoracic sticking must adhere strictly in order be certified halal. In essence, the animal slaughtered using thoracic sticking must die from the initial cut of the

four vessels, trachea, esophagus, carotid, and jugular. The purpose of exsanguination is to maximize the blood loss.

The concept of slaughtering in Islam is connected to the purity of substances, which belief to affect the body as well as the soul. Scientifically, thoracic sticking allows even greater blood loss during exsanguination resulting in the higher quality meat product. Residual blood content in the meat has a significant contribution to the overall quality of the meat by lowering the Haem content as well as reduces bacterial count in the meat itself. Most poor meat qualities are often associated with the number of blood count still left in the body after slaughtering.

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