

# THE HALAL MEAT INDUSTRY: CHALLENGES OF THE AUTHORIZATION, VALIDATION AND PRODUCTION OPPORTUNITIES

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**Abstract**– The aim of this article is to deepen the understanding of some issues related to productions and marketing opportunities of Halal meat. Subjectivity about Halal method for slaughtering animals which is common among so many people who use the animal welfare as pretention has to be understood by the public that it is a set of standard and regulation and should not be seen as a personal issue and perspective of a subject. To certify qualified ethically Halal meat (HM) a guarantee system is needed. The Halal slaughtering that is used to legalize meat to be consumed by Muslims around the world is easy, simple, lawful, and less painful than other mechanical and electrical implemented methods. HM has the potential to serve a greater share of the world population, and food producers and exporters are being urged to use science and technology fit to legislative standards to enhance ethically produced meat. Marketing with a clearly targeted strategy by following the Islamic regulation about HM has been drastically raised due to some factors including, the immigration of Muslims; the global warming which strongly deserted lands that becomes not proper for animal growth; the well-established infrastructure of meat production in the developed countries. Recently, Muslims do care about Halal slaughtering and much more about the traceability system of HM. There is a need for bar-coded information on the label of HM to assure that the product is qualified and produced according to Halal standards.

**Key Words** – Halal meat, authorization, validation, production principals, Halal meat marketing challenges

## I. INTRODUCTION

It is forecasted that in 2030, Muslim population will cover 27% of the global population [1, 2]. The trade in Halal products, particularly the meat, is growing rapidly. Muslim consumers in different regions of the world are ready to pay a premium price for products that are culturally sound and ethically compatible and fair. The global market value of the Halal food (HF) industry was estimated at US\$1.1 trillion in 2013[3]. HF has the potential to serve a greater share of the world's population as it accounts for 22% of global food exports, and supply is inadequate to meet demand in the world's growing Muslim population. Many Muslim

legislative boards have formulated standards for HM and established an accreditation system for certifying slaughtering-houses. Although the recent growing market sets an enormous challenge to the HM production there is also preserved and stand-offish opinions from many people around the world about the way of slaughtering animals. Despite to the remonstrative views of none-Muslims about the religious slaughtering, HM production in the world has increased sharply in recent years due to some crucial factors. The authors therefore see the development of international markets for the truly cultural and ethical HM products as very important topic to be discussed, and would be a good opportunity for the meat industry to take advantage of it. This article highlights on the principals related to authority, validity, production and marketing value of HM.

## II. MATERIALS AND METHODS

*Objectification on Halal standard:* It is in respects of many people that the historically continuation of the oppressive views and interference of foreign cultures urge others to shift the standards of their religious legislative ethics and cultures on the account of animal welfare. From the emotional point of view, humans do have an absolute concern about the animal welfare especially during breeding and pre-slaughtering treatments. However, the topic related to Halal slaughter has become a subjective issue to many who use the animal welfare as pretention. Muslims who want to consume meat that is legislatively and ethically appropriate regard the Halal issue as of great value objective. On the other hand, as a real example, many people are astonished and cannot believe that castration disbudding and docking practices (CDDP) are used to improve the health and welfare of animals. The question usually arises, how are the effects of CDDP that continue within the lifespan of an

animal considered as ethical and improve the animal welfare? While the Halal slaughtering that takes couple of seconds (end of animal's life) has been regarded as unethical and widely. CDDP in livestock is a routine agricultural practice operated by many meat producers, but this custom is always perceived as objectionable by the Muslims, general public, and animal welfare societies for few reasons. For example, docking too short can increase the risk of rectal prolapsed [4] and also resulted in significantly lighter recto-cooccygeal muscles, [5]. Castration has been regarded as painful procedure, regardless of the species and age [6] as it is performed without anesthesia or post-operative analgesia. Also excessive heat and electrical use applied in disbudding is commonly considered to be quite hurtful and can damage underlying bone [7]. However, Halal slaughtering is method used to legalize the items to be consumed by Muslims around the world that is easy, simple, lawful, and less painful than other mechanical and electrical implemented methods.

### III. RESULTS AND DISCUSSION

*1. Authorization of HM production:* The ritual slaughter is an obligated rules to produce HM. The World Islamic Commission for Halal is one of the Muslim world league bodies enjoys independent legal special personality, and aims to strengthen the commitments to legitimize HF. In any Muslim country there is a governmental commission called Fatwa and Awqaf Chamber that is also the only lawful association to certify production companies. More Muslim legitimacy centers in none-Muslim countries can also certify some firms for HM production. The authorization process takes few measurements and considers specific criteria that regarded legal due to the Islamic regulations. Those regulations urge people to treat any animal proposed for HM production with mercy and must be restrained using appropriate equipments so as to minimize any avoidable soreness, grief and pain and also to maximize the product legitimacy. It is urged to follow the Islamic practice of Halal production which includes the following conditions: The slaughter man must be an adult Muslim and sane that can phrase Allah's name on it. Animal should not see other animals being slaughtered. The animal must not see the knife being sharpened. Animals must be correctly

positioned toward Mecca. Knife must be sharp and long enough for a swift incision. It is mentioned in Koran (Al-Maeda: 2) that ``animals must be alive (heart beating) for the cut, it is also disallowed for you to eat the dead animals (not slaughtered), the blood, the flesh of swine, and slaughtered animals without mentioning Allah's name during the incision, also animals which have been killed by strangling, or a violent blow, or a headlong fall, or by the goring of horns, or which has been eaten by a wild animal and animals killed on stone altars``. Thus, stunning prior slaughtering which makes animals unconscious and may stop heart beating is seen as unlawful by Muslims.

*2. Halal slaughter vs pain issues:* A set of particular measurements must be provided on pain management following the practice of slaughtering animal while taking into consideration the religious and cultural rules. There are many slaughter methods that religions and cultures demand/obligate around the world [1]. Non-stun slaughter (Halal way): killing animals while they are alive, conscious and restrained horizontally on one side, and making a swift deep incision by an acceptable sharp knife with a prayer ``Bism Allah`` is the correct and most acceptable in the regulations of HM production. Although many people have been trying to adjust the regulation of Halal slaughter and animal welfare practices, still many debates are being conducted to compromise the issue. In terms of the welfare ranking of restraint devices, [8] ranked the ones that held animals in an upright position as excellent; rotating restraint boxes with adjustable sides were conditionally acceptable but leg clamping rotating pens or shackling and hoisting and suspension by the legs as serious problems that should never be used for conscious animals. The opportunities for making HM, which seen as a lucrative business for many urge us to compromise and provided further justified restraining methods to improve the welfare of animals during ritual slaughter and allows Muslims to enjoy ethically satisfied meats. The objectification of pain and consciousness during captive bolt stunning and religiously mandated (ritual cutting) slaughter procedures for animals have been a controversial subject [9]. Many allegations have been made that Halal slaughter does not comply with animals' welfare but that was disapproved in a study used an electroencephalograph (EEG) and electrocardiogram

(ECG) that the Halal slaughter is the humane method of slaughter while the captive bolt stunning, practiced in recent decades, causes severe pain to the animal [9]. In the Halal slaughtering style, the EEG had no change on the blotting graph, thus indicating that the animal did not feel any pain during or immediately after the incision (3 sec). After 6 sec of incision, the EEG recorded zero level, showing no feeling of pain at all. As the brain message (EEG) dropped to zero level, the heart was still pounding and the body convulsing vigorously (a reflex action of the spinal cord) driving maximum blood from the body: resulting in hygienic meat as believed in Halal regulations. However, the animals killed by captive bolt stunning were apparently unconscious soon after stunning. EEG showed a change in the graph indicating a severe pain occurs immediately after stunning. The hearts of the animal stunned by captive bolt stunning stopped beating earlier as resulting in further retention of blood in the meat [9]. Some scholars even believe it amounts to causing pain to the animal twice or killing the animal twice (stunning and incision). Mechanical stunning is said to cause shock waves and subsequently destroys part of the brain resulting in a loss of consciousness. It is often considered permanent as the animal is not alive any further, which it does not seem to have any place in Halal system. However, animal electrically stunned may regain if not slaughtered within seconds that means the animal still alive experiencing a great pain. It was reported that direct exposure of cells to intense electric pulses is known to produce damages to cell membranes and organelle. An intense electric pulse can produce two major effects on cells caused by the electric potential (field) and current (energy). As a result, the electric current goes through the cells membrane causing heat of cell membranes and cytoplasmic contents [10]. The subsequent brings about many complex biochemical reactions, including oxidation of proteins and lipids.

*3. HM opportunities and challenges:* HM has the potential to serve a greater share of the world population, and exporters are urged to use science and technology fit to legislative standards to enhance ethically produced meat. Although some in the Halal production movement might question whether we are straying from the regulation of animal welfare, it cannot be denied that Halal marketing is heading for a boom. In the developed

countries still have lots of opportunities to produce and export HM in the future on the back of growing demands. The current supply of HM is inadequate to meet demand in the world's growing Muslim population. However, the understanding of HM regulations is still a conceptual and is not widely understood by the public. Because many meat producers are not familiar with the characteristics of HM that the idea was projected as conflicting with animal welfare, the deprived information caused them to lose great opportunities to make lucrative business. However, many meat producers are asking how they can take advantage of this growth market. Firstly, attention should be given to meeting the requirements of a guarantee system that will ensure Halal quality and allow consumers to develop their preferences for HM products with a feeling of trust. Secondly, stimulus in getting Halal production should be offered by the agriculturally developed countries. Marketing with a clearly targeted strategy by following the Islamic regulation on HM has been drastically raised due to some factors: The Muslim migrants into Western countries; the global warming dumping is becoming more catastrophic as desertified lands which becomes not proper for animal growth; and finally the well-established infrastructure of meat production in developed countries.

*Challenges:* Over the last two decades, HM products have been marketed in increasingly larger quantities outside the area in which they are produced. Production of meat in foreign countries that has to comply with the Halal regulations may be limited by: 1) Acceptance of Halal slaughtering way, as far as the producers would not accept and legalize the Halal way this will stand as an obstacle and challenge. 2) Traceability in Halal is one of the major challenges facing the production of HM. 3) Continuation secured meat supply along with free and fair trade. If consumers would know that meat sold as Halal but figured out is not real Halal that will results in a consumer recall or food withdrawal which is action taken to remove meat from the supply chain. Given a holistic attention to compromise this issue will make the challenges less complicated. Joining fair teams from scientific and religion scholars will absolutely help to seriously find common standards satisfy all.

*HM labeling and certification:* There should be principals of global Halal food law that aims to: protect human rights in terms of ethics, health, food

safety and security. A logo that functions as a Halal trademark is used to allow consumer to understand that item is purely Halal. Only about 50% of consumers believe and have feeling of trust in the outsider label as the meat was produced in Halal way. So we urge for more efforts to be made in many parts of the world to develop regional and international Halal product guarantee systems including the labeling system. There is an obvious need to establish international 'control' and supervision of Halal certification and labeling rules to accredit any producer. A strict legal traceable system should be implemented to compromise the suspiciousness on HM. There is also a need for using codes on the meat packages that should have the following information: The true nature of the item, list of ingredients used during processing, lot identification number includes date of slaughtering, ethics rules, set of hygiene practices and the feed given to animals during breeding time. This might ease the way for nations that are reluctant to enter into binding agreements about Halal slaughter.

**A. Setting up a guarantee system:** Meat producers need a certified set of standards, linked to the specific philosophy of Halal production that helps to produce truly ethically sound HM. Standards are not simply a collection of subjective prohibitions describing what is not allowed in Halal slaughtering. Halal standards reflect clearly the approach and definitions of Halal production by emphasizing what ought to be done in order to Halalize meat and stressing the avoidance of non-stunning slaughtering substitutes that have been seen as controversial issues for many years. This requires inspection measures that could be done either onsite of production or at a devilry point.

**B. Halal traceability:** Traceability is a risk-management tool which allows food authorities to withdraw or recall products which have been found as unsafe or ethically unfit for consumption. Lately, Muslims even become aware of the traceability system of HM. The information on the primary and secondary bar-codes is not sufficient. There must be traceable information about the internal practices during processing including: breed, gender, birth date and place, ingredients in the feed, place and date of slaughtering.

## VII. CONCLUSIONS

If Halal meat is to become accessible to more Muslim people in the world, then there is a necessity for the discovery of pain biomarkers and traceability rules. To expand the marketing opportunities more clear set of regulation and quick Halal authentication system (QHAS) are needed. Research to innovate a rapid Halal biochemical marker test to minimize the Halal fraud should be implemented (aerobic mobile strips (bio-sensors)). A new guarantee and surveillance system that perhaps are desired to differentiate between the stunned from non stunned animal meat.

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