

PAPER • OPEN ACCESS

## Meat and meat-based products: Challenges and opportunities in halal food security

To cite this article: Z Ruzulan *et al* 2021 *IOP Conf. Ser.: Earth Environ. Sci.* **756** 012017

View the [article online](#) for updates and enhancements.

# Meat and meat-based products: Challenges and opportunities in halal food security

Z Ruzulan<sup>1,2,\*</sup>, M A Jamaludin<sup>1</sup> and A H Ishak<sup>2</sup>

<sup>1</sup>International Institute for Halal Research and Training (INHART), Level 3, KICT Building, International Islamic University Malaysia (IIUM), Jalan Gombak, 53100 Selangor, Malaysia

<sup>2</sup>Academy of Contemporary Islamic Studies, Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia

\*E-mail: zulaipa3198@uitm.edu.my

**Abstract.** The demand for halal meat and meat-based products among the Muslim population in Malaysia has been increasing as meat is an essential food. Meanwhile, the non-Muslims are also becoming aware of the quality of halal meat, hence the access towards halal meat and meat-based products are increasing as well. However, the local production of halal meat is insufficient to cater the demand and this leads to the dependency on imported meat to ensure that halal meat is made available and accessible to the society in Malaysia. This paper discusses the challenges and opportunities of halal meat and meat-based products for the sustainability of the halal food security in Malaysia. Document searching technique based on the available literature was used to fulfil the objectives of the study. The study found that the complex halal meat chain with several government agencies concerning halal matters lead to the inefficient treatment of maintaining the halal integrity. For this reason, focusing on the viable opportunities to increase the local meat production is significant in ensuring that the supply of meat is sufficient and halal tayyibban.

## 1. Introduction

Meat has been the preferred food because it provides energy and it is enriched with nutrients mainly protein and micronutrients such as iron, zinc and vitamin B<sub>12</sub>. It is estimated that the demand for meat will keep increasing and it is predicted to increase twofold by 2050, particularly in the developing countries [1]. However, some of the projections remain obscured because of several reasons, such as the changes of the socioeconomic, production level, climate change and the cost of living that could be different from one place to another [2]. Indeed, the economy and culture are the most significant factors that could increase the demand for meat. This has been reported by the FAO [3] where the low-income and middle-income countries tend to participate in the agriculture sector where livestock is considered as the high-value agriculture product and this could reduce poverty. Certainly, meat consumption among members of society has increased due to the easy access of the livestock.

In Malaysia, apart from rice and vegetables as the major contributions to food security, this has also included meat and meat-based products. Abdullah, Ali and Noor [4] have emphasized that ruminant category is among the highest demand from the domestic consumers which consists of cow, goat, buffalo and sheep. All of these are primary concern on the issues of food security in Malaysia. The



Department of Statistics Malaysia [5] has reported that import dependency ratio (IDR) for meat-based products in 2019 is very high which consists of goat meat (88.8%), beef (76.4%) and fresh milk (41.9%). Furthermore, the percentage of imported food products between 2019 and 2020 increased with meat being the highest or leading food type.

Pertaining to the IDR of meat, it is higher. The scenario has a close relationship with the halal concern since the majority of the population in Malaysia is the Muslim society. Thus, it is significant enough to ensure the imported meat supply to this country is *halalan tayyibban*. As of now, there are many triggering issues on the halalness of meat and meat-based products due to the inadequate supply of local meat. This has increased the dependency on imported meat. For this reason, controversy sparked amongst the society and it has pressured the government to clear up the authenticity status of the halal meat and meat-based products that are available in Malaysia. Therefore, this paper discusses the challenges and opportunities of halal meat and meat-based products for the sustainability of halal food security in Malaysia.

## 2. Literature Review

From the perspective of the Islamic law perspective, there are specific guidelines in terms of meat consumption and its halalness status in particular. Several verses in the Quran have highlighted the legalities of meat consumption that the Muslims must observe with regard to the dietary meat guidelines accordingly. There are four criteria of haram food mentioned in the Quran; namely dead animals that are not slaughtered; due to the beast being strangled, beaten down, fallen from a height, gored to death due to death by another and that of the beasts of prey having devoured such animals, blood poured forth, the flesh of pig and the slaughtered animals for idols and not for Allah absolutely [6]. The prohibitions are shown in several verses like in Surah Al-An'ām (6):145 and Surah Al-Mā'idah (5): 3. The verses are as follow:

“I find not in the message received by me by inspiration any (meat) forbidden to be eaten by one who wishes to eat it unless it be dead meat, or blood poured forth, or the flesh of swine, - for it is an abomination - or, what is impious, (meat) on which a name has been invoked, other than Allah. But (even so), if a person is forced by necessity, without willful disobedience, nor transgressing due limits, - thy Lord is Oft-forgiving, Most Merciful.”

(Al-An'ām (6):145)

“Forbidden to you (for food) are: dead meat, the flesh of swine, and that on which has been invoked the name of other than Allah; that which has been killed by strangling, or by a violent blow, or by a headlong fall, or by being gored to death; that which has been (partly) eaten by a wild animal; unless you can slaughter it (in due form); that which is sacrificed on stone (altars); (forbidden) also is the division of meat by raffling with arrow; that is impiety.”

(Al-Mā'idah (5): 3)

On this occasion, the dietary guidelines for meat and its derivatives based on the above legal evidence apply to the land animals only. This is because there is the hadith of the Prophet PBUH that mentions the aquatic animal is '*tahir*' (pure) and halal for consumption. From this, land meat is considered as a critical ingredient in Islamic law. Following to this, the Islamic legal maxim of, '*al asl fi al-zabaih wa al-luhum al-tahrim*' (the norm of meat is haram until it is slaughtered through a Shariah compliant manner) has become an indicator to emphasize that the meat is excluded from the principle of permissibility due to the clarity of the divine text on the types of meat that have not undergone a proper ritual slaughter [7]. Besides, Muslims have to observe the condition for valid slaughter namely the slaughter must be a Muslim, the tool is sharp and not from the bones, nails, and teeth and *qasd* or intention to slaughter with the name of Allah, if not the meat is forbidden to consume. Therefore, Muslims must obtain only halal meat for their consumption since it is a mandatory commandment from the Lawgiver.

Nowadays, the halal meat industry has been industrialized. There are specific halal requirements that need to be abided by ensuring the halal meat products are *halalan tayyiban* within the modern practice. Among the standard requirements that are related to the halal meat products in Malaysia are MS1500: 2019, Halal Food -General Requirements and Malaysian Protocol for the Halal Meat and Poultry Productions. Both functions to support the implementation of the halal certification process. Apart from that, the Department of Islamic Development Malaysia (JAKIM) has published the latest Manual Procedure for Malaysia Halal Certification (MPMHC) (Domestic) 2020 and Malaysian Halal Management System (MHMS) 2020 to improve the halal integrity in the halal certification process in Malaysia. The requirements are vital to sustaining the development of halal meat industry in Malaysia by ensuring that Muslims have genuine access to only halal meat products and avoiding from any malpractice. The efforts carried out by the government have shown the importance of preserving several essential values of Shariah namely religion (faith), body and mind of the Muslim society in Malaysia. It includes under the concept of *sadd al-zara'ie* (blocking the means) and that the government as the *'ulul amr* has accountability to make *halalan tayyibban* meat is sufficient and accessible at the local market by establishing proper halal governance to cater for the halal meat related issues.

Undeniably, halal meat related issues have been debated frequently among members of the public particularly the halalness status of the meat itself, be it local or imported. Recently, there has been a halal meat scandal triggered in Malaysia that it has affected the trust and confidence of the Muslim society to consume the available halal meat in the market [8]. Consequently, the sale of red meat dropped due to this scandal [9]. From this issue, it has been denoted that there is a weakness of the halal meat supply chain system in Malaysia. The halal meat fraud still occurs even though there is a robust system implemented to assure the halal status of the meat products. Therefore, a proper mechanism is urgently needed to address the halal meat security in Malaysia. Besides, this paper objectively needs to identify the challenges in providing halal meat in Malaysia and to examine the opportunity for widening the halal meat industry in Malaysia. This is to ensure that halal meat is sufficiently supplied to the Muslims in particular in line with the halal requirements. For this study, the meat and meat-based products refer to the Food Regulation 1985 as meat and meat products, namely meat or fresh meat, chilled meat, frozen meat, minced meat or ground meat and meat product consist of meat paste, manufactured paste, smoked meat, canned meat, canned meat with other food, meat extract or meat essence and edible gelatine.

### **3. Research Methodology**

A qualitative research methodology was used in this study. The document search technique was applied to collect the data. The data consisted of journal articles, Food Act 1983 and its regulations, meat and poultry guidelines, halal related standards, authoritative sources from the halal hub JAKIM, newspaper cutting and other related articles available in Google Scholar, ScienceDirect and Scopus online databases. Thereafter, these data were analysed using the content analysis techniques until the objectives of the study were met.

### **4. Results and Discussions**

The emerging halal related issues on meat and meat-based products at the market are mainly due to the dependability of the imported halal meat. Therefore, there is a need to examine the challenges and the opportunities of halal meat and meat-based products to sustain the halal meat security in Malaysia. The discussion of the challenges and opportunities are as follows:

#### *4.1. Challenges*

Several challenges have become the hindrance towards providing halal meat and meat-based products that are free from any non-halal elements. The biggest issue today is in terms of the halal food legislation whereby the halal issues are under the sovereignty of different government agencies with different halal related laws. This simultaneously affects the halal enforcement in Malaysia, allowing

for overlapping to happen because the scope of halal jurisdiction is broad [10]. Among the halal related laws are Trade Descriptions Act (TDA) of 1972, Food Act of 1983, the Consumer Protection Act of 1999, and the Animal Rules of 1962 [11]. Due to the different government agencies tackling the halal matters, the issue of halal meat and meat-based products cannot be encountered accordingly since it requires vigilant scrutiny to identify the root cause of the problem. Abdul Aziz [12] has stressed that meat and meat-based products that are within the requirements of the Malaysian country can only be made available in this country. Among the requirements are as follow:

- i. The halal abattoirs and the processing plants are recognized by the Department of Veterinary Services (DVS) and JAKIM.
- ii. Meat and meat-based products have been halal certified by the approved foreign halal certification body of the respective country which is recognized by JAKIM.
- iii. Provide the health certificate from the authorized veterinary agency from the respective exporting countries.
- iv. Imported meat approval from Department of Malaysian Quarantine and Inspection Services (MAQIS) before permitting meat and meat-based products enter into the Malaysian market. [12]

This can be evidenced by the current halal meat scandal and fraud involving the cartels of halal meat importers that it cannot be settled efficiently. Following this issue, the Malaysia Halal Council (MHC) has to be reactivated soon and that the Malaysian Prime Minister temporarily chairs the council to address the meat cartel scandal. Certainly, this meat fraud has fuelled anger among the majority of the Muslim population and subsequently has shattered the Malaysian halal system [8]. Currently, there is a good effort to establish the stand-alone halal laws, but as of now, this matter still could not be realized [9]. Absence of specific halal act to cater to the halal matters including the halal meat related issues makes the situation uncontrolled.

Moreover, there is a possibility of the cross-contamination to happen or breaching any principles of Shariah due to long complexity of halal meat supply chain before arriving in Malaysia [8]. Sometimes, this issue happens due to the different regulatory requirements of the exporting countries with Malaysian regulation. Aside from that, lack of stringent monitoring at the entry point to enter into Malaysia triggers the issue particularly at the land entry point between Malaysia and Thailand. Several issues have been reported in the media, including the seizure of frozen chicken worth RM495,608 at the Bukit Kayu Hitam entry point [13], widespread of smuggling of the frozen chicken and meat along the border of Kelantan-Narathiwat [14] and many similar cases have been reported involving smuggling activities at the border. Besides, there was a finding regarding the halal food adulteration which contravenes to the Food Act 1983 and its regulations. In 2017, MAQIS confiscated four containers which were believed to have mixed with pork and mutton. This scenario was supposedly not to happen in Malaysia because the incident was against the Food Regulation 1985 under Clause 11 (c) on particular of labelling. It was mandatory to declare on the label if the food contains beef or pork or its derivatives, or lard. This requirement is adequate to govern the halal food adulteration Malaysia [15]. Besides, Food Hygiene Regulation 2009 under Clauses 36 (2) and (3) also obligate the food handlers to segregate food processing from swine origin (*sus suscrofa*) and the appliances [16]. Similarly, MS1500:2019 have stated the requirement on not permitting to transport halal meat with non-halal meat. Hence, it will cause panic among the Muslim society in particular due to their concern on the probability of halal meat and its products to have been adulterated by the non-halal substances.

In fiqh perspective, once the meat is contaminated with the non-halal, the status will change to shubhah or haram. This is in accordance with the Islamic legal maxim, '*iza ijtama'a al-halal wa al-haram ghalaba al-haram*' (if permissibility and prohibition coincide, prohibition prevails [17]). Besides, the contaminated meat has to be discarded or disposed since the mixed food cannot be separated. Meatball products for instance have commonly been adulterated by non-halal ingredients like pork, dog meat [18] and blood ([19]).

In the halal assurance system, this processed food is considered as a critical ingredient since the source of origin is commonly derived from the imported meat which is cheaper compared to the local meat. During the meatball processing, blood plasma and proteins are added as surimi is the main

ingredient. Sahilah, Liyana, Aravindran, Aminah, and Mohd Khan [20] have mentioned that this derivative has popularly been added as part of the food additive. Moreover, the researchers have suggested the authority to monitor and combat this fraud because it might expose the Muslim population with the haram substances. Blood plasma becomes a preference among the food manufacturers because it does not incur much cost compared to egg yolk [19]. This practice is forbidden in Islam because blood is impure (*najs*), and it has been highlighted in the Quran in terms of its prohibition. Based on this condition, it is important to highlight the street food vendors that sell processed food. This is because some of the premises are not halal certified where the chance of having cheap processed food as part of the food ingredients is higher.

#### 4.2. Opportunities

Continuous efforts should be conducted by involving all halal stakeholders in ensuring that halal meat and meat-based products could be supplied adequately and accessible to the Muslim community in Malaysia. Meanwhile, the government has introduced many initiatives to cater to the demand for halal meat products such as increasing local meat production. Indeed, due to the halal meat scandal that happened recently, there are three lessons identified. Firstly, the society tends to put on hold for a while from buying imported meat due to the avoidance of shubhah. In Islam, Muslims are advised to avoid the ambiguous status of food. In this case, local meat is preferable and promising in terms of its halalness. This is because the Muslims know the background of the supplier particularly those who reside in the village. Other than that, the local meat is more assured in terms of its halalness because the halal slaughterhouse in Malaysia is under the authority of JAKIM and State Religious Administration Department directly [21]. Owing to this, the government needs to control the price of the local meat to ensure there is no manipulation that occurred among the sellers due to the increasing demand that is affected by the imported meat scandal.

Secondly, since the government has introduced many incentives in the agriculture field, therefore it is the golden opportunity for the local people to be involved in the meat industries. Instantly, the Ministry of Agriculture and Food Industries has introduced several types of grant for strengthening the food security in Malaysia like 'Young Agropreneur Program' and 'MyFutureAgro' where these grants are offered to increase the involvement of the local people in the husbandry field [22]. Concerning this matter, many available registered abandoned lands are ready to be cultivated for this matter. DOA has reported that there were about 103,563 hectares of abandoned land which consists of 46,382 lots across Malaysia in 2019, which are ready to be developed [23]. On this occasion, the involvement of the young entrepreneur is needed since many efforts are already provided by the government to increase the local meat production in Malaysia.

Furthermore, introducing a new halal meat segment like rabbit meat could possibly be a lucrative venture since it provides an opportunity for the halal meat industry. A study conducted by Hernandez [24] has emphasized that rabbit meat is more nutritious compared to the others. It has been shown that several states have recognized rabbit as a source of income and at the same time support the halal meat production in Malaysia. The Department of Veterinary Services of Terengganu, for instance, has committed to support and guide those involved in this industry in line with the Young Agropreneur Programme initiated by the Malaysian government [25] and this has successfully been realized by the establishment of Terengganu Rabbit Valley [26] and Persatuan Penternak Arnab Pedaging Kelantan (APeK) that function as a stop centre to collect, process and supply the rabbit meat in the states. Apart from that, Good Tree Garden in Selangor is also actively contributing to the halal meat production in Malaysia. Here, the company has halal rabbit slaughterhouse certified by JAKIM. Moreover, this company supplies the rabbit meat to hotels and restaurants as well as it provides intensive halal training and consultation related to rabbit rearing. Based on this, it has been shown that viable halal meat alternative segment is needed to ensure the local meat production is sufficient to fulfil the demand for halal meat.

## 5. Conclusion

Proper and systematic halal meat management in Malaysia is urgently needed to ensure that halal meat is sufficient to cater to the increasing demand of the Muslim population. From this, dependency on the local meat is preferable so as to increase the level of integrity. Besides, it can shorten the halal meat supply chain because halal meat adulteration occurred commonly from the imported meat and meat-based products. Apparently, with several government agencies catering to the halal matters, it raises the probability that may lead towards the inefficiency to deal with the halal triggering issues. Based on this situation, the establishment of a stand-alone halal act under JAKIM solely could improve the halal assurance system in Malaysia. Moreover, the involvement of young entrepreneurs in the programs provided by the government is essential since many opportunities could increase the local meat production. Recognizing halal rabbit meat as a new segment in the halal meat industry is also a big advantage, since this segment could fulfil the increasing demand from the Muslim population, apart from its nutritional values that are better than primary red meat. For future research, the study on the agriculture tourism product derived from the halal meat industry is significant to be explored as this could vary the business activities among local entrepreneurs in Malaysia.

## Acknowledgement

The authors would like to thank the Academy of Contemporary Islamic Studies (ACIS), Universiti Teknologi MARA and the International Institute for Halal Research and Training (INHART), International Islamic University Malaysia for their support to complete this paper.

## References

- [1] FAO *Meat & meat products*. Available from: <http://www.fao.org/ag/againfo/themes/en/meat/home.html> [Accessed 2 January 2021]
- [2] Godfray H C, Aveyard P, Garnett T, Hall J W, Key T J, Lorimer J, Pierrehumbert RT, Scarborough P, Springmann M, Jebb SA. 2018 Meat consumption, health, and the environment *Science*. **361(6399)**
- [3] FAO 2019 *Livestock and income generation*. Available from: [http://www.fao.org/ag/againfo/themes/en/income\\_generation.html](http://www.fao.org/ag/againfo/themes/en/income_generation.html) [Accessed 2 January 2021]
- [4] Abdullah F A, Ali J, Noor M S 2020 The adoption of innovation in ruminant farming for food security in Malaysia: A narrative literature review *J. of Critical Reviews*. **7(6)** 738-43
- [5] Department of Statistics Malaysia *Malaysia trade statistics review (MTSR)*. Available from: [https://www.dosm.gov.my/v1/uploads/files/1\\_Articles\\_By\\_Themes/External\\_Sector/MTSR/Malaysia\\_Trade\\_Statistics\\_Review\\_Vol-1-2020.pdf](https://www.dosm.gov.my/v1/uploads/files/1_Articles_By_Themes/External_Sector/MTSR/Malaysia_Trade_Statistics_Review_Vol-1-2020.pdf) [Accessed 4 January 2021]
- [6] Ali M Y 2009 *Kriteria halal haram untuk pangan, obat, dan kosmetika menurut al-Quran dan Hadis* (Jakarta: PT. Pustaka Firdaus) p 79
- [7] Al-Rabwa I F 1997 Al-dhaba'ih wa turuq al-shariah li al-zakah In *Majalah al-fiqh al-Islami*, 10th Session (Jeddah: Majma' Fiqh al-Islami) **2(10)** pp 254-293
- [8] Richard W *Silence brings uncertainty for Malaysia's food industry amid fake halal meat scandal*. Available from: <https://salaamgateway.com/story/silence-brings-uncertainty-for-malaysias-food-industry-amid-fake-halal-meat-scandal> [Accessed 4 January 2021]
- [9] Ravin P *Red meat sales drop in supermarket after fake halal meat scandal*. Available from: <https://www.themalaysianinsight.com/s/293596> [Accessed 4 January 2021]
- [10] Soraji A J, Awang M D, Yusoff A N 2017 Malaysia halal trust: between reality and challenges *Int. E-J. of Advances in Social Sciences*. **3(7)** 197-204
- [11] Ahmad A N, Abidin U F, Othman M, Rahman R A 2018 Overview of the halal food control system in Malaysia *Food Control*. **90** 352-63
- [12] Abdul A J *Kenyataan media JAKIM berkenaan isu daging seludup: Isu daging seludup. Portal Rasmi*. Available from: <http://www.islam.gov.my/ms/kenyataan-media/2385-kenyataan-media-jabatan-kemajuan-islam-malaysia-jakim-berkenaan-isu-daging-seludup> [Accessed 4

- January 2021]
- [13] Bernama *Frozen chicken worth RM500,000 seized in Bukit Kayu Hitam*. Available from: <https://www.nst.com.my/news/crime-courts/2021/01/660646/frozen-chicken-worth-rm500000-seized-bukit-kayu-hitam> [Accessed 4 January 2021]
- [14] Sharifah M A *Kelantan Customs says frozen chicken, meat smuggling still rampant*. Available from: <https://www.nst.com.my/news/crimecourts/2020/12/651870/kelantan-customs-says-frozen-chicken-meat-smuggling-still-rampant-> [Accessed 5 January 2021]
- [15] *Food Regulation 1985* 2018 (Petaling Jaya: International Law Book Services)
- [16] *Food Hygiene Regulation 2009* 2018 (Petaling Jaya: International Law Book Services)
- [17] Mohammad A L, Said B, Riaz A, Mohammad A A and Madaa M M 2013 *Islamic legal maxims & their application in Islamic finance* (Kuala Lumpur: ISRA)
- [18] Rahman M M, Md Eaqub A, Sharifah B A H, Shuhaimi M, Uda H and Umami K H 2014 Polymerase chain reaction assay targeting cytochrome b gene for the detection of dog meat adulteration in meatball formulation *Meat Science* **97** 404-409
- [19] Mohammad Aizat J, Mohd Anuar R and Ahmad Badri A 2014 Elemen najis dan kotoran dalam isu halal haram menurut Islam ed Russly A R, Nurdeng D and Mohammad Aizat J (Serdang:Penerbit UPM) pp 41-62
- [20] Sahilah A M, Liyana L, Aravindran S, Aminah A and Mohd Khan A 2016 Halal authentication in Malaysia context: potential adulteration of non-Halal ingredients in meatballs and surimi products *International Food Research Journal* **23(5)**
- [21] The Department of Islamic Development Malaysia (JAKIM) *Malaysian protocol for the halal meat and poultry productions*. Available from: <http://www.halal.gov.my/v4/images/pdf/protocol%20halal%20meat%20poultry.pdf> [Accessed 5 January 2021]
- [22] Ministry of Agriculture and Food Industries *Agropreneur*. Available from: <https://www.mafi.gov.my/agropreneur-muda> [Accessed 5 January 2021]
- [23] Department of Agriculture (DOA) *Maklumat Tanah Terbiar*. Available from: <http://www.doa.gov.my/index.php/pages/view/411?mid=232> [Accessed 5 January 2021]
- [24] Hernández P 2008 *Proc. of the 9th World Rabbit Congress* (Verona, Italy) pp. 367-383)
- [25] Bernama *Kerajaan sedia bantu, galak usahawan muda ternak arnab*. Available from: <https://www.bharian.com.my/berita/nasional/2020/11/748598/kerajaan-sedia-bantu-galak-usahawan-muda-ternak-arnab> [Accessed 5 January 2021]
- [26] Farah SA *TRV pusat sehati projek arnab*. Available from: <https://www.mafi.gov.my/documents/20182/254805/02-min.pdf/a0d2dca7-c9a4-4bda-9242-ed1acc51606b> [Accessed 5 January 2021]