Nurhidayah Muhammad Hashim  
Nur Nafhatun Md Shariff  
Siti Fatahiah Mahamood  
Hanifah Musa Fathullah Harun  
Mohd Solahuddin Shahruddin  
Azri Bhari  
Editors

Proceedings of the 3rd International Halal Conference (INHAC 2016)

Springer
Part V  Halal Food and Safety

The Role of Regulatory System in Ensuring Halal Compliance Among Poultry Firm Operators in Malaysia .................................................. 387
Husna Hashim, Norma Md Saad, Haniza Khalid and Hayatullah Laluddin

Detection Methods and Advancement in Analysis of Food and Beverages: A Short Review on Adulteration and Halal Authentication ................................................................. 397
Norsuhada Abdul Karim and Ida Idayu Muhamad

Halal Consumption Pattern Model: A Conceptual Framework .................. 415
Yaty Sulaiman, Nik Kamariah Nik Mat and Noor Hasmini Abd Ghani

Indirect Competitive Enzyme-Linked Immunosorbent Assay (ELISA) for the Determination of Mammalian Gelatin in Pharmaceutical Capsules ..................................... 429
Nur Azira Tukiran, Amin Ismail, Shuhaimi Mustafa and Mahajir Hamid

The Effect of Affective Commitment as a Mediating Variable in the Relationship Between Halal Practices Integrity and SMEs Performance ................................................................. 441
Kamiyah Supian, Hafisah Ahmad and Mokhtar Abdullah

Factors Affecting the Intention to Purchase Halal-Labelled Chocolate Bar Product in Kelantan ............................................................... 455
Nursalwani Muhamad and Zulatiff Abdul Latiff

An Overview of Toyyib Aspect of Halal Food Production in Meat and Meat Products ............................................................... 467
Aishah Buyang, Zainon Mohd Noor and Norham Abdullah

Consideration of 'Umūra Al-Balwa’ Method in Food Contamination from Halalan Toyyiban Perspektifie .............................. 479
Muhammad Afiq bin Ab Razak, Mohd Anuar Bin Ramli, Muhammad Ikhlas Rosele and Mohd Farhan Md Ariffin

Technical Review on Vinegar Fermentation Process and Physicochemical Properties of Vinegar Product Based on Shariah and Scientific Perspectives .............................................. 491
Mohammad Aizat Jamaludin, Alifah Amin, Rashidi Othman, Nurulhidayah Ahmad Fadzillah and Betania Kartika

Current Analytical Methods and the Contribution of NIR Spectroscopy for Halal Authentication Studies: An Overview .................. 501
Mutia Nurulhusna Hassain, Mohd Fared Abdul Khir, Katril Nadia Basri and Jamilah Bakar
Consideration of ‘Umūm Al-Balwā Method in Food Contamination from Halalan Toyyiban Perspectives

Muhammad Afiq Bin Abd Razak, Mohd Anuar Bin Ramli, Muhammad Ikhas Rosele and Mohd Farhan Md Ariffin

1 Introduction

Today, food production technology has reached sophisticated level as the technology is evolving from time to time. Modern food production technology integrates multiple disciplines of science fields such as biology, chemistry, material engineering, toxicology, nutrition science and utilizes innovative equipment and processing technique. With such advancement, good quality food products, improved nutritional value are made available for consumer to make their preferences in the market. Islam outlined regulation on food and drink in the Quran and Sunnah (prophetic tradition). Islam viewed food as a blessing from Allah, provided for human to utilize and to worship Him as the supplier of all blessings. Halalan toyyiban is the key principle that regulates food law in Islam. In the Quran (2:168), Allah clearly states that every human has the obligation to seek for halal (permitted) and toyyiban (wholesome, good) food to fulfill their bodily and spiritual needs. The subject of halal (permissible) and haram (forbidden) is crucial for Muslim with the growing concern for ethical, food safety and cleanliness aspect in food (Kamali 2013). Prohibited items are clearly mentioned in the Quran and Muslims are obliged to avoid them. However, there are some exemptions to that general principle,

---

M. A. B. A. Razak · M. A. B. Ramli · M. I. Rosele · M. F. M. Ariffin
Academy of Islamic Studies, University of Malaya, 50603 Kuala Lumpur, Malaysia
e-mail: afaqrazak89@siswa.um.edu.my
M. A. B. Ramli
e-mail: mohdumair@um.edu.my
M. I. Rosele
e-mail: ikhlas@um.edu.my
M. F. M. Ariffin
e-mail: alnaqarobin@gmail.com

© Springer Nature Singapore Pte Ltd. 2018
N. Muhammad Hashim et al. (eds.), Proceedings of the 3rd International Halal Conference (INHAC 2016), https://doi.org/10.1007/978-981-10-7257-4_42
especially in the case of emergency and necessity (Al-Quran, 2:173). This shows that Islam is a religion of tolerance and appreciates the difficulty faced by humans.

Generally, Halal-an-toyyiban issue in food is related to contamination of impurity and haram substance in the food products. According to the regulation of halal critical points (HCP), there should be no impurity nor haram element allowed throughout the food supply chain (Kohilavani et al. 2013). However, there are situations where the contamination is becoming widespread and difficult to control such as cross-contamination. The best example is the cross-contamination of DNA (deoxyribonucleic acid) of haram animal origin, such as porcine DNA. This contaminant can originated from external source, even without intentional adulteration involved within the food supply chain. When this kind of contamination occurs, it will be difficult especially for the producer to maintain the food totally free from haram DNA, as the DNA is very small in size (molecular size) and has the ability to contaminate food without direct contact of unknown source.

These attributes of being small and widespread are well-matched with the term umum al-balwa (widespread hardship) in Islamic jurisprudence. This hardship can be considered as a masyaqah (difficulty) that must be lifted as Islamic principle stated that ‘difficulty will be facilitated with ease’ (Al-Suyuti 1997). Therefore to overcome this issue, this study will provide information based on the literature regarding the concept of umum al-balwa, its validity and its application in terms of food contamination. Furthermore, two issues in food contamination will be discussed in order to have insight on umum al-balwa method.

2 Food Contamination

Contamination is a major problem in food safety. Contamination occurs when unintended materials enter the food. Food contamination can be categorized into three forms: (i) physical contaminants, (ii) chemical, and (iii) microbiological (Sprenger 1997). In food supply chain, every part of the process is susceptible to contamination (Nerin et al. 2016). In other word, contaminants may enter to the process even from the beginning—the raw material preparation stage, up to then completed products and also to the retail distribution. Different process may lead to different type of contamination depending on their equipment used, type of food, ingredients, sanitary chemicals and process method.

In terms of food safety, physical contamination causes injury rather than illness when consumed (Ward and Ward 2015). Various examples of physical contaminants occurred in the form of glass shards, metals, plastics, wood and other visible objects. Chemical contamination may occur due to sanitary chemicals such as disinfectant (Nerin et al. 2016) from cleaning process. Improper conduct will leave the chemical to be absorbed into food material and causing food poisoning or physical injuries if ingested. In addition to that, the major contributor to food poisoning and illnesses is microbiological contamination. This type is caused by
toxin produced by microorganisms such as bacteria, fungi and also due to viruses (Sprenger 1997; Ward and Ward 2015).

These three types of contamination is the conventional definition regarding food safety. In term of Halalan toyyiban perspective, another definition of food contamination is proposed to be added to fit the Islamic ruling.

3 Halalan Toyyiban and Food Contamination

As mentioned earlier, Halalan toyyiban principle plays important role in food regulation for Muslim. The concept is universal as it covers the whole aspect of food preparation, a farm-to-table application. This principle can be dissected into two major concepts, the halal-concept and toyyib concept. Combining both concepts ensures complimentary and ideal guideline for Muslim to customize their food source without compromising spiritual and physical safety.

The first concept, halal, referred to the status of food, in this case, the permissibility according to Shariah. Halal food is a food that does not contain unlawful material and it should be filth free. It covers the preservation of spiritual part of human, because it is an act of sin if a Muslim consumed prohibited things without any valid reason under the concept of necessity. The second part is the toyyib concept, which stresses the quality of the food such as healthy, hygiene, clean, wholesome, as complimentary to the halal aspect (Noriah and Naemah 2007). Therefore, in addition to halal, it is highly recommended for Muslim to choose the finest, healthiest food available. In relation to food contamination, toyyib concept is a guideline for food safety. To both aspects, food contamination can be occurred but the difference between them is their impact on human. Halal contamination (due to presence of filth or haram elements) will harm spiritual aspect whereas toyyib contamination—conventional contamination (physical, chemical and biological) will harm physical aspect of a human.

4 Concept of Najs (Impurities) and Its Taxonomy in Islam

4.1 Concept of Impurities in Islam

Impurities is the element that forbidden to be consumed in Islam. This is because impurities or filth (Arabic: an-najs) is unclean and due to that, is forbidden by Allah. However, not all things that forbidden in Islam is necessarily najs (Al-Adawi 2004). Allah permits everything that is good and prohibits everything that is bad as mentioned in Quran (Al-Araf: 157). Salam and Tayniyyah (2005) when commenting on that verse explained that anything that provides benefits is pure; whereas anything that leads to harm is filth. This notion is in accordance to
jurisprudence method: 'The forbiddance is revolving based on the harm effect whether it presents or not'. Based on this method, the forbiddance is related to the presence of harm such as in forbiddance of carcass, blood and pork. However, if it causes no harm, there will be no prohibition and regarded as permissible to be consumed as the sign of prohibition (which is harmful) is absent.

4.2 Taxonomy of Najs

According to the Quran and Sunnah, najs can be identified in several categories. First, filthy, which refers to anything that is considered dirty from human's perception. Despite its prohibition, filth is commonly used in agriculture and animal rearing such as fertilizer and feed. Feces of chicken, goat, cow and pig are commonly utilized for fertilizer. Fertilizer is an exception because it is external and even though it made from pig origin, the produce (plants or vegetables) is halal (Muzakarah Jawatankuasa Fatwa 2008). Second, al-khamr (intoxicant) and alcohol. Intoxicant is strictly prohibited in Islam. Every beverage that possess intoxicant property (Sahih Muslim, Hadith no. 2003) which either brewed from grapes, coconut juice, barley, potatoes, maize, rice, wheat, fruits or cereals is categorized as al-khamr. This type of drinks will cause impairment to the mind control. Alcohol, on the other hand, is a nomenclature that denotes substance that contain hydroxyl group (−OH) (IUPAC 1997). Basically, not all alcohols are intoxicant (Muzakarah Jawatankuasa Fatwa 2011), but usually intoxicant drink contains alcohol mixture mainly methanol and ethanol of different composition (Che Wan Jasimah 2001). Alcohol derived from wine is prohibited (Muzakarah Jawatankuasa Fatwa 2011) because it retains the filthiness.

Third, animal blood which refers to red liquid that flows in blood vessel. It is regarded as filthy and can cause harm if consumed. This prohibition is explicitly mentioned in the Quran (2:173, 16:175, and 5:3). Generally, majority of scholars prohibit consumption of flowing blood (Al-Andalusi, n.d.) (Al-Tha’labi, n.d.) This prohibition, however, has exception towards several types of blood which include fish blood, heart, spleen, liver, blood that remained after animal being slaughtered as long as it do not flow (Al-Zahalilly 1985) and blood that retained after cleaning. The fourth one is pig and its relatives. These are animals that are forbidden to be consumed in Islam. The prohibition is clearly mentioned in the Quran, Al-Sunnah and Ijma’ (consensus). The prohibition is due to its filthy nature. Many Quran exegesis scholars such as Al-Zamakhshari (1998) and Al-Qurtubi (2006) opined that pig’s flesh, fat and limbs is prohibited. Ibn Hazm of Zahiri viewed that pig skin is pure after ritually cleansed, other parts are haram (Hazmi 1928). Nevertheless, Ijma’ agreed that whole part of swine is prohibited.
5 Concept of Umum Al-Balwa

The word umum al-balwa comprises of two Arabic words of umum and al-balwa. According to Faris (1979), the original word for umum means exalted, lengthy and abundance. The word balwa is the verbal noun of the word bala’. The meaning of the word bala’ is a test (intihān), trial (ikhtibār) or tribulation. Umum al-balwa is a legal factor for exemption (rukhsah) in Islam to be enjoyed. According to Al-Suyuti (1997) there are seven conditions that a mukallaf (religiously responsible human) can be considered entitled for exemption in performing religious obligation. The conditions are travelling, illness, forgetfulness, lacking, ignorance and difficulties or Umum al-balwa. Al-Suyuti and Ibnu Najaam considered that rukhsah for Umum al-balwa is derived from maxim: ‘Hardship begets facility’ (Al-Suyuti 1997).

Generally, there is no specific technical definition of Umum al-balwa given by Muslim classical scholars (Manan and Masudani 2015; Al-Dusari 2000). Muslim contemporary scholars, however, have tried to offer a new definition for this term. For example, Al-Zuhailiy (1985) defined Umum al-balwa as proliferation of trial, making it difficult for any person to get rid of it and avoiding it. Another definition given by Al-Dusari (2000) is an inclusion of an event upon mukallaf, or towards circumstances related to obligation, which is difficult to avoid, or it become hefty and needs to be facilitated. Manan and Masudani (2015) enhanced the definition to the occurrence of calamity with the urgency of needing it or it is difficult to avoid from it, and causing intensifying amount of tribulations upon majority of mukallaf.

5.1 Indicators of Umum Al-Balwa

From the above definitions, it shows that umum al-balwa refers to the hardship which occurred and difficulties to be avoided. If we do not avoid it, it can cause greater hardship to us. It is the method that allows excuses (rukhsah) to be taken because of some unexpected conditions. However, when the situation returns to the normal condition, it negates rukhsah and the original ruling will then take place. The indicator of umum al-balwa is gauged by two aspects, which are the level of darwa (necessity) and the level of masyaggh (hardship). If the necessity and hardship reaches the highest level where burden the mukallaf is no longer bearable, it is now said to be umum al-balwa. When this situation occurred, the hardship must be lifted and eliminated according to legal maxim ‘Al-Masyaggh taqib al-taysir’ (Al-Suyuti 1997). The reason for such exemption shows that Islam is a tolerant religion, and suits the nature of human so that they can perform their obligation according to their best ability.
5.2 Application of Umum Al-Balwa in Fiqh Literature

The method of umum al-balwa has been applied by fiqh scholars mostly in the issue of taharah (purification), which deals with forgiven impurities. Forgiven impurities refer to impurities that are excluded from the original obligation to be purified because it is hard to remove due to its inevitable presence. Several application of umum al-balwa are as follows: Impurities of road soil/dust (Al-Suyuti 1997). Since it is too small and difficult to avoid for the road users, scholars agreed that it is considered forgiven filth and mukallaf can carry on their prayer even their cloth is stained by such impurities. Therefore, cleaning the tainted cloth is not compulsory. Bird droppings on tawaf area (Al-Suyuti 1997). Tawaf area that is covered with so much of bird droppings will cause hardship for a person to go through as they need to perform ablution every time they stepped on it. In the Malaysian context, it can be related to lizard droppings in mosque as it is too widespread and difficult to avoid. Therefore, no further purification is required. Purity of cat (Al-Suyuti 1997). In Islamic jurisprudence, cat holds special position is taharah ruling. Cat is pure according to hadith due its habit that always surround human circulation (Al-Aqsalani 1928). Cat saliva is pure and if the filthiness property retained it will be a burden to clean all equipment that has been licked by it. Therefore, it is considered as maryaqqah that caused umum al-balwa upon mukallaf that should be eliminated.

5.3 Umum Al-Balwa in Food Application

Scholars also applied umum al-balwa in matters relating to food. This is useful in order to understand food contamination issue. Food that contains impurities is forgiven because of umum al-balwa as explained by scholars. Others are: Grains that has been tainted with buffalo’s dung and urine. According to Al-Suyuti (1997), grain that is collected from farm that is tainted with such impurities will still be considered halal. This is because farmers utilize buffalos to maintain their farm and it is difficult to keep the grain not in contact with its dung and urine. Therefore, umum al-balwa is implemented and permissible to be consumed. Permissibility to consume fish with its entrails. Ibn Hajar al-Haythami mentioned that small fish is permissible to be consumed without removing its inner organs (Al-Haythami n.d.). He stated that their body parts are not considered as filthy. This is because the inner part of small fish is difficult to be removed. In Malaysian context, this is similar to the consumption of anchovies.
6 Consideration of Umum Al-Balwa as Alternative Method in Food Contamination

6.1 Factors of Umum Al-Balwa

The application of umum al-balwa has been used by scholars particularly in food-related issues. Therefore, it has the potential to be developed as an alternative method in halal food determination. In order to consider a contamination as umum al-balwa, we need to know what are the factors that lead to such condition. Scholars have identified that these are the factors that contribute to hardship that might occur (Al-Dusari 2000; Al-Bahusayn 2003): The first factor of 'umum al-balwa' is due to the presence of small quantity of impurities or insignificant amount of filth. Insignificant amount of filth is pardoned as it will cause difficulties to remove them. Examples that given by the scholars are impurities like dirt on the road, blood on the size of needle’s head, insect blood or minute splash of urine. Secondly, due to the unknown state of impurities. It means that when something stained into one’s cloth, but the stain is difficult to identify whether it is filth or not. Therefore, it is forgiven according to Islamic law. Thirdly, something that cause more burden or hardship if one’s do not avoid it. This is one of the important factors of umum al-balwa. For instance, blood is considered as filth and must be cleaned. However, for a Muslim butcher who works in the abattoir, the blood stains are too widespread and it is almost impossible for him and his cloth to stay clean and free from impurities. Therefore, it is umum al-balwa for him if he tries to remove them. Fourth, prolonged period of act. One of the examples is menstruation of women. Women are not compulsory to recompense (goda’) all the prayers during their menstruation period. This is because, it is a great amount of hardship for them to replace the prayer because menstruation normally took very long period of time. Therefore, they are exempted from the original ruling.

Fifth, the act is widespread. This is also one of the vital attributes of umum al-balwa condition. For example smoke from burning najis. Traditionally, people use animal waste as a fuel for combustion. Therefore, scholars agree that smoke that produced from burning filth is forgiven due to difficulty to avoid it. Sixth, possess necessity upon it. One of the examples is the purity of cat’s saliva. Cat is known as a creature which wandering around human circulation. Therefore, it causes hardship to clean all household equipment that have been licked by cat. Hence, it is exempted from the original ruling. The last factor is repetitive act. This factor can be described in situation of bird droppings in jawaf area. Since it is widespread along the area, it would be a burden for a person as she should renew his ablution whenever he stepped on the droppings. This will cause repetitive act, and due to the widespread condition and causing hefty act, therefore it is forgiven. Therefore, he does not need to renew his ablution every time and allowed to proceed with prayer.
63. Mode of Fertility in Human Protein Conformation

and other inline variables

and different inline variables

and different inline variables

and different inline variables

and different inline variables

and different inline variables

and different inline variables

and different inline variables

and different inline variables
Consideration of 'Umum Al-Balwa Method in Food Contamination ...

has provided various methods that can be used to solve halal food issue, including
the idea of umum al-balwa.

To understand how umum al-balwa works in dealing with contaminated food,
we pointed out two main issues in food production. Every circumstance occurred
must be analyzed thoroughly prior to the application the umum al-balwa method.

(a) Food contamination and food adulteration

Food contamination is slightly different from food adulteration and can lead to
different approach in handling the issue. Though these two terms is seemingly to be
used interchangeably, but according to Food Act 1983, adulteration refers to
intentionally adding substances that is not safe for human consumption. Food
adulteration such as the usage of melamine, borax, plastic in frying oil do not entitle
for umum al-balwa, because it is intentionally done. In other words, food adul-
teration do not fit to apply the method of umum al-balwa, because it already
contains the forbidden substance from the very beginning, which excludes from the
concept of rukhsah. On the other hand, food contamination is transference of any
objectionable matter into or on the food (Sprenger 1997) which occurred uninten-
tionally and out of human control.

(b) DNA cross-contamination

DNA is a small particle that can disperse into surrounding. It can be transferred
from one place to another. When DNA of an organism is detected in food, the food
either may contain the organism itself as an ingredient or it may be originated from
surrounding, i.e., due to cross-contamination. The method of umum al-balwa can be
applied in this case if the food process does not involve any usage of pork or its
derivatives in any ingredient or in any process in the food supply chain. In other
words, there is no human involvement or motive to put prohibited element in the
process. When the prohibited (haram) DNA can be detected in food there are two
possible reasons; (i) the food itself contains raw materials from haram animal that
mixed with other ingredients or direct contamination; and (ii) cross-contamination
due to the exposure to the surrounding. Direct contamination means a direct vi-
oflation of hatalan toyyiban principle, therefore, the food is not permissible and
should be removed from the supply chain. In this case, umum al-balwa cannot be
applied. However, when the contamination is discovered to be cross-contamination
in which no direct contact or intentional adulteration involved, the method of umum
al-balwa can be applied. This is due to the DNA itself as a contaminant is able to
shift from place to place via surrounding without direct contact and such activities
can be considered as almost unavoidable.

These attributes matches with the condition of widespread hardship—umum
al-balwa, as it resonates with classical examples of umum al-balwa. However, to
determine whether or not the food is halal, other requirements should be observed
as pointed out by Manan and Masudani (2015). When all legal conditions of umum
al-balwa are fulfilled, only then it is safe to regard the food is halal even though it is
contaminated with haram DNA. This method applied as a mean of facility
References

In conclusion, the application of DNA in food production is not an option; it is a necessity. It allows for genetic modification of food crops, which can improve their nutritional value and yield. The potential of DNA technology in food production is vast, and it is only a matter of time before we see its full potential realized. We must continue to research and develop this technology to ensure its safe and effective use in the future.
Consideration of 'Umūm Al-Balāwī Method in Food Contamination ... 489

This book contains selected papers which were presented at the 3rd International Halal Conference (INHAC 2016), organized by the Academy of Contemporary Islamic Studies (ACIS), Universiti Teknologi MARA (UiTM) Shah Alam, Malaysia. It addresses halal-related issues that are applicable to various industries and explores a variety of contemporary and emerging issues. Highlighting findings from both scientific and social research studies, it enhances the discussion on the halal industry (both in Malaysia and at the international level), and serves as an invitation to engage in more advanced research on the global halal industry.