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## An Overview of Malaysian Food Industry: The Opportunity and Quality Aspects

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**Abstract:** In foodstuff content, it is more meaningful if the quality standard assures that food is suitable for consumption, processed in a hygiene manner, is nutritious and safe. This paper will focus on the Malaysian food industry development in terms of quality standards that are necessary to be given consideration in the production of food. This paper also concentrates on the principles of quality assurance in food processing which is required by the global market standards. Malaysia being a part of this global market would like to set the quality standards that involve the processing of halal food. At present, the Malaysian government is using the global halal market stand as a brilliant opportunity to establish the country as a halal hub for halal products in this region. To achieve this goal, the government has set some international quality standards and MS1500:2004 to be complied with Malaysian food manufacturers in the production of quality food.

**Key words:** Food industry, food quality and standard, small and medium enterprise, MS1500:2004, Malaysia

### INTRODUCTION

Generally, standards are normally related to improving future processing that is to follow. Referring to that, the objectives of this paper is (i) to overview the present scenario in Malaysian food industry opportunities and development and (ii) to expose the concept of quality and standard that are able to use in Malaysian food industry. On one side, standards are essential tools for local and international businesses, which shape the contribution of economic progress through industry development and trade, as well as, a guideline in the assurance of consumer protection. On the other hand, standards are able to be eliminators of trade barriers, which means that, they play a critical role to facilitate goods and services exchange across borders.

Orriss and Whitehead (2000), shows that the globalization of food trade has focused its attention on strengthening measures taken to ensure quality and safety especially on imported foods. To achieve that purpose, it is required of the government to be responsible to established standards, legislation and enforcement programmes that are necessary to control food quality and safety. In addition, industries also play an important role in implementing quality assurance systems, where at the same time; they are also able to ensure they are in compliance to standards and legislation stated by a home or parent country.

**Food Control:** Most of the countries have specific regulations, legislation, guidelines and acts, which are considered necessary to be complied to and implemented by food industries when they process their products. Different countries will use different acts, regulations or guidelines; but however, it is still

necessary to follow and be consistent to the international practice with allowance to some modifications to suit best to local circumstances, or otherwise their food products will not match and fulfill the market requirements which would then make it difficult to enter the global market. This is supported by Mohamad (2004b) and SIRIM (2005), where their policies state that there is a requirement for national standardization in order to adopt the international standards as the Malaysian Standard. However, some adjustment is needed to be made to the standard implemented locally as it has been found that some standards may be inappropriate as international standard practice because of geographical and climatic factors as well as the fundamental technological problems.

The food control system is recognized by Malaysia as a system that requires a continuous re-examining and reviewing in order to ensure important improvements are effective in the food processing and production safety system. Coordination and collaboration among various agencies in Malaysia is imperative for an effective and efficient food programme (Codex Alimentarius Commission, 2006). When a country is aiming to achieve the effectiveness of a national food control system, it should gain the full support and coordination from all parties related to ensure the success of its food control system is well implemented, which involves food producers and the government. However, both parties play different roles in the food safety guarantee before the food is consumed by the consumers.

Referring to Mohamad (2004a), a total food chain approach will recognize the responsibility that lies in all

those involved in the production and delivery of safe food. Furthermore, the author explains that responsibility encompasses all stakeholders throughout the food chain, including farmers and the suppliers of farm and slaughterhouse produce and packinghouse operators, food manufactures, transport operators, wholesale and retail traders, caterers and street food vendors and also the contribution made by consumers.

According to Codex Alimentarius Commission (2006) and Orriss and Whitehead (2000), producers at all stages of production, processing and distributing, must be responsible for safe food and should establish food safety assurance programmes while the government, on the other hand, plays the primary role of providing leadership for the implementation of the food safety assurance system. To fulfill this role, various guidelines ranging from farms to tables have been developed to assist food industries and producers to better understand and implement food safety assurance programmes. However, consumers should also be able to play active roles in the development of food standards which are justifiable as they are the only ones who understand their own needs best (Mohammad 2004b).

#### GLOBAL HALAL MARKET OPPORTUNITY

Malaysia is known by other countries as a modern Islamic country in this decade (MATRADE, 2007). Referring to Mohamad (2004a), smaller nations like Malaysia are bound to face difficulties in competing in the global trade economy that is mostly dominated by larger economies, as well as it is a complex process to develop adequate resources for their food industry development and trading. At present Malaysia emphasizes on agriculture as the third engine of growth, and is aiming to take a prime role as a food-producing and trading nation in this region and also to play an active role in the halal-food hub amongst Muslim countries to cater for about two billion Muslims out of the world's population of Muslims. (Mohamad, 2004a; Yaakob *et al.*, 2007).

Adaptation from Muslim Population Worldwide 2006 in Yaakob *et al.* (2007) lists the Muslim population includes the Asian Continent (amounting to 1,060.65 million among which is Malaysia with 16 million), Oceania (0.4 million), Africa (462.8 million), Europe (51.2 million), South America (1.6 million) and North America (6.6 million). These growing Muslim consumer populations are expected to provide the entrance support for economies such as in production, marketing and distribution of a broader range of halal products (Trade Mart, 2005; Department of Standard Malaysia, 2007).

In relation to the growing demand for halal food which is influenced by the Muslim consumer awareness of their responsibility to consume only halal food (Mohammad Noorizzudin *et al.*, 2007a and Yaakob *et al.*, 2007). The demand for halal products is therefore increasing and

expected to continue rising in tandem with the increasing Muslim population all over the world. From the figures of Muslim populations stated, it can be concluded that the world halal food market potential not only comprise Muslim but also of non-Muslim countries (Yaakob *et al.*, 2007).

Indication by Mohamad (2004a) shows, the potential world market for halal-food is estimated to stand at USD 80 billion out of the world agricultural trade which is about USD 275 billion yearly. Consequently, the increasing level of incomes and prosperity among Muslims, especially in West Asia and Asia, North Africa, Europe and North America will lift per capita demand for halal products. As Muslims become halal sensitive, the demand for the availability of a wider range of halal food and non-food products will expand to the market beyond the current level (Trade Mart, 2005). According to Riaz (2007), Jafri (2006) and Norlia (2008), halal is universal, whereas the halal process is recognized by both Muslim and non Muslim consumers as a symbol of quality, safety and wholesomeness.

**Towards Halal Hub:** Malaysia, foresees that there is great potential for developing and promoting halal products and services for the global market. The Third Industrial Master Plan (IMP3) 2006-2020, specifies three main situations encouraging Malaysia to become a global halal hub for the production and trading in halal goods and services. These specifications are:

- That the Muslim population is about 1.6 billion and is spread out across the world and therefore is estimated that by 2010, the global Muslim population will be approximately 3 billion.
- Halal products and services are also gaining an increasing acceptability among non-Muslims.
- The global market value for trade in halal food and non-food products is estimated to be at US\$2.1 trillion annually. This market has therefore created an interest for food production by both Muslim and non-Muslim countries.

The food processing industry in Malaysia is dominated by small and medium enterprises and as well as foreign companies that has invested and is known as Multinational Corporations (IMP3 2006). Therefore, Mohammad Noorizzudin *et al.* (2007a), states that one of the halal hub potential is to create opportunities for SMEs to penetrate into the halal market. This statement is supported by IMP3 (2006), which indicates that SMEs involve more than 80 percent of the total number of corporations in the food processing industry. The biggest segment of SMEs is involved in cereal and flour-based products, which produces grain milled products, bakery foodstuff and noodles and as well as other similar products.

In order for Malaysia to be established as a global halal

hub, the Malaysian government prefers in encouraging Muslim SMEs participation. (Mohammad Noorizzudin *et al.*, 2007a). The reason is, only the Muslims really understand the concept of halal (permitted) and haram (prohibited) according to the *Shariah* regulations. However, combinations practice of both standards i.e. the halal standards and international standard needs a balanced implementation when manufacturing or producing halal food or products. These two standards as a combination must be complied with widely by all halal food manufacturers, as an assurance in producing quality halal products and as independent variables in penetrating the domestic as well as global halal markets. In addition, the most important factor is that all the SMEs need a progressive action to certify their food products are of high halal quality (halal, safe, hygienic and nutritious) by the local authorized bodies JAKIM or other Islamic bodies depending on their market entry. Furthermore, according to Trade Mart (2005) this listed some factors that contribute to Malaysia's role in being a strong halal base. The factors include; (i) being recognized as a modern, liberal and progressive Islamic country; (ii) global recognition which provides credibility and market acceptance of halal products produced or processed in Malaysia; (iii) has the industrial and commercial infrastructure to produce and market halal products; (iv) has played a pioneering role in the establishment of the "Halal Guidelines" at the regional and international levels; (v) Malaysia's halal certification issued by JAKIM is recognized worldwide due to its stringent criteria and; (vi) strong government support and commitment to develop and establish Malaysia as the global halal hub.

For further reference and support of this the subject of halal, the Encyclopedia Britannica Almanac 2003 as adopted by Riaz and Chaudry (2004), discusses the halal activity in various countries, where it is globally accepted and indicates that Malaysia, which is a member of the Organization of Islamic Countries (OIC), is one of the countries that; (i) has strong halal activity both in food processing and export/import trading, which is evidenced by the halal certification within the country; (ii) requires halal certificates for importing into the country of not only meat products but also processed meat, food and other similar products and (iii) has an organized halal certification either supported by the community or by its respective government.

Any country especially with a large Muslim population needs to consider in regulating and implementing the halal guidelines to have its food supply accepted by Muslim consumers. For example, Indonesia is unquestionably the leader in the amount of food imported and its rigid laws in meeting the halal regulations. However, it is also mentioned that Malaysia is the pioneer in establishing halal laws in the early 1980s and remains a force in matters relating to halal

certification globally (Riaz and Chaudry, 2004).

**Halal and haram concept:** Discussions and research regarding the halal concept, especially for halal meat, halal food and halal non-foodstuff, have appeared to become a worldwide subject of conversation among Islamic countries and in this decade itself there has been an awareness raised on this issue in non-Islamic countries in Asia, United States of America, Europe and other counties that need to fulfill their domestic Muslim market and as well as to expand into the global Muslim markets. Nowadays, the concept of halal is internationally understood especially by food manufacturers and therefore helps them in expanding their export trade into the international market.

According to Islamic Food and Nutrition Council of America, IFANCA (2007), Agriculture and Agri-Food Canada (2006) and JAKIM (2007), Halal is an Arabic word means lawful or permitted. The opposite of halal is Haram, which means unlawful or prohibited. Halal and Haram are universal terms that apply to all facets of life. However, these terms are used mostly in relation to food products, meat products, cosmetics, personal care products, food ingredients and food contact materials and other aspects of life such as appearance items. In Islam, there are dietary laws that define food as Halal or Haram. Halal foods are permitted while foods that are believed to be Haram are prohibited. As a main basis of understanding, Muslims are prohibited from consuming pork and alcohol because they are regarded as unclean or termed as *Najis* and therefore are both considered Haram. For Muslim consumers, for example meat products must be certified as Halal and must come from certified slaughterhouses that follow Islamic slaughter practices.

In a simple description as indicated by Yaacob *et al.* (2007), it concludes that the term halal is referred to as permissible based on *Shariah* perspectives, which are from religious and spiritual faith beliefs. However, the term *Toyibbah* is referred to being good or wholesome, with respect to quality, safety, hygiene, cleanliness and nutrition and authentically scientific. While many items are clearly halal or clearly haram, there are still some things which are not clear. These kinds of item are considered to be questionable or of being of a suspicious nature and therefore more information is needed to categories them as Halal or Haram. When there is uncertainty, the item is often referred to as being questionable or referred to as *Mashbooh* (IFANCA, 2007; JAKIM, 2007). For instance, food containing ingredients such as gelatin, enzymes and emulsifiers are questionable and termed as *Mashbooh*, because the origin of these ingredients are unknown (Agriculture and Agri-Food Canada, 2006).

Information reported by Agriculture and Agri-Food

Canada (2006), lists food considered as Haram include: "Swine/pork and its by-products; animals improperly slaughtered; animals killed in the name of anyone other than Allah s.w.t; alcohol and intoxicants; carnivorous animals, birds of prey and land animals without external ears; blood and blood by-products and foods containing any of the above products". Supported by JAKIM (2007); Sumali (2006) and SIRIM (2005), in the Islam religion Halal food means food that is permitted under the *Shariah* law and fulfills the following conditions;

- The food or its ingredients do not contain any parts or products of animals that are non-halal to Muslims by *Shariah* law or products of animals which are not slaughtered according to *Shariah* law
- The food does not contain any ingredients that are najis according to *Shariah* law
- The food that is safe and not harmful
- The food that is not prepared, processed or manufactured using equipment that is contaminated with things that are *Najis* according to *Shariah* law
- The food or its ingredients that do not contain any human parts or its derivatives that are not permitted by *Shariah* law
- During preparation, processing, packaging, storage or transportation, the food is physically separated from any other food that does not meet the requirements stated in the items above or any other things that have been decreed as *Najis* by *Shariah* law

In addition, as pointed out by Yaakob *et al.* (2007), three important guidelines are given in the selection of food and drinks in Islam. They comprise; (i) whether the consumption of the foodstuff is prohibited by Allah s.w.t; (ii) whether the foodstuff is obtained through halal or haram means and (iii) whether or not the material is harmful to health. These can be used as basic guidelines by Muslim consumers when consuming or buying. According to Mohammad Noorizzuddin *et al.* (2007b), Islam is a way of life and it's economical, social and political systems are based on cooperation and consultation among the brotherhood.

#### MALAYSIAN STANDARDS APPROACH

The Malaysian Standard is a consensus document developed by a Standard Development Committee (SDCs) within the Malaysian Standards Development System and approved by the Minister of Science, Technology and Innovation in accordance with Standards of Malaysia Act 1996 (Act, 549) (Department of Standards Malaysia, 2008). Generally, the Department of Standards Malaysia appoints SIRIM Berhad as the agent to develop the Malaysian Standards. The Department also appoints SIRIM Berhad as the agent for distribution and sale of Malaysian Standards (SIRIM, 2005).

According to Mohamad (2004b), SIRIM is defined as "an agreement document that is voluntary and contains technical specifications or other criteria which provides common rules, guidelines or characteristics of products, processes or production methods, terminology, labeling, packaging or marketing to provide a basis for trade, technical regulations (including consumer protection) and conformity assessment, research and development".

In a simple way, a standard can prevent the disorganization and it makes things work, makes processes fit and smooth and also open them to better trade. Referring to Mohamad (2004b), SIRIM's fundamental task is to ensure quality and safety of products and services for general public use and consumption. Furthermore, one of the standardization aims is to make the manufacturing process simple, cleaner, and to maintain a reasonable production cost. Standardization can also raise the quality, safety and reliability levels of food products and can definitely provide economical benefits (Mohamad, 2004b).

However, from the customer's point of view, a standard is defined as a documented agreement containing technical specifications or other specific criteria to be consistently used as rules or guidelines (Mohamad, 2004b). In addition, standards also are regarded as definitions of characteristics to ensure that material, products, processes and services are fit for the purpose of consumption or use (Peri, 2006). Overall, standardization of goods and services build consumer confidence with regards to quality and reliability of the sellers. Mohamad (2004b) concludes that the level of consumers' confidence will increase significantly with public participation in the standardization process, where standards are able to protect them from purchasing things that are not safe, unhealthy and involve other risks. This is agreed and supported by Codex Alimentarius Commission (2006), who states that "consumers in Malaysia are actively involved in standard setting at the national level by their representatives, the Federation of Malaysian Consumers Association (FOMCA), which is a member of the Food Safety and Nutrition Council, the Technical Advisory Drafting Committee of the Food Regulations 1985 and the National Codex Committee".

**Development of Malaysian standards:** The Department of Standards Malaysia is a national standardization and accreditation body. Its main function is to foster and promote standards, standardization and accreditation. According to SIRIM (2005), development of Malaysian standards plays a role as a catalyst to national economy, promoting industrial efficiency and development, benefiting the health and safety of the public, protecting the consumers, facilitating domestic and international trade and supplementing international cooperation and

expansion in relation to standards and standardization. Additionally, Malaysian Standards are developed through consensus by committees which involve balanced representation of producers, users, consumers and others with relevant interest. Furthermore, Malaysian Standards are aligned to the adoption of the international standards and are reviewed periodically to ensure their efficiency from time to time. However, the use of Malaysia Standards is voluntary (SIRIM, 2005) and the Malaysian Standards is recognized and coded with "MS". MS's guideline handbook indicates four main standards that must be followed and complied by food manufacturers when processing their food (SIRIM, 2005). There are namely:

- MS 1480: 1999-Food safety according to HACCP system
- MS 1500: 2004- Halal food production, preparation, handling and storage - general guidelines
- MS 1514: 2001-General Principles of Food Hygiene
- MS ISO 15161: 2002-Guidelines on the Application of ISO 9001:2000 for the Food and Drink Industry

#### **QUALITY ASSURANCE PRACTICES IN THE HALAL FOOD PROCESSING INDUSTRY IN MALAYSIA**

As required by SIRIM and the Ministry of Health Malaysia food industries and food manufacturers are encouraged to voluntarily use the international standards as well as additional standards to the halal standards requirement in processing food According to SIRIM (2005), they are three main standards that are needed to be carried out by food manufacturers in Malaysia to fulfill the requirements and these are; HACCP, GHP and Halal Standards.

However, this paper will briefly discuss the food processing standards related to the ones set by the Malaysia government. Other relevant standards that are familiar to Malaysian food manufacturers and other multinational food companies are: The Hazard Analysis Critical Control Point (HACCP), Good Hygiene Practices (GHP)/Good Manufacturing Practices (GMP), Halal Food Standard and ISO. This is also supported by Lokman (2008), when he clearly states that:

"The concept of halal covers all aspects of human life. Thus, the model of the halal system and assurance should encompass a holistic concept of quality including hygiene and sanitary, safety, wholesomeness and is permissible by God. The GMP and HACCP are the subset of the halal concept that assures cleanliness and safety of food that is permissible to be consumed by the Muslims. GMP and HACCP are the quality guidelines system that can be incorporated with the holistic approach of the halal concept."

In order to accomplish the halal standard requirements, Malaysian food processing industry also need to follow the guidelines of the international standards that are implemented. Supported by Orris and Whitehead (2000),

GMP and GHP are prerequisites to implement HACCP system that needs to meet the entire requirements concerning hygiene as included in the legal act as well as in the General Principles of Food Hygiene Codex. Figure 1, shows that the MS1500:2004 covers every aspect in most international standard such as GHP, GMP and HACCP, which required by world food manufacturers. Thus, the MS1500:2004 is a comprehensive standard that does not deny the international standard but compliments each other.

**HACCP:** Hazard Analysis and Critical Control Point (HACCP) is also known as MS1514:2000 (SIRIM, 2005) in Malaysia. The importance of HACCP system is that it is recognized internationally as a tool to control food related hazard. Application of the HACCP system is the choice of many major importing countries, as it is confirmed by the increased adoption of the mandatory application of the HACCP system as a requirement for both domestically produced and imported food products (Orris and Whitehead, 2000; Taylor, 2001; Jin *et al.*, 2008; Trienekens and Zuurbier, 2008).

At the processing level, the Ministry of Health Malaysia, has implemented the Malaysian Hazard Analysis Critical Control Points (HACCP) Certification Scheme since 1997 to enhance the safety of food produced for both domestic and export markets (Codex Alimentarius Commission, 2006). The scheme requires the food industries to establish and implement the HACCP system that meets the pre-requisite criteria, followed by an application for certification of the system (Ministry of Health Malaysia, 2008).

Enforcement of the HACCP system will help the implementation of other quality systems or standards practiced by food manufacturers. Consequently, HACCP can be described as a catalyst in the implementation of hygiene and safety features in food preparation. This idea is supported by the research carried out by Jin *et al.* (2008) food entrepreneurs in China, where 50% of the respondents adopted HACCP in their food manufacturing, as well as implemented other quality management and control systems to ensure food safety. These systems include Good Manufacturing Practices, Sanitation Standard Operating Procedures and International Standard Organization 9000 series.

According to Jin *et al.* (2008), the research showed that four main factors that were indicative of influencing the decision of HACCP's implementation in the Chinese food industry. These are (i) consumer awareness of food safety; (ii) extension and support from the government; (iii) compliance with the law and (iv) recommendation of industry associations. In addition, research did by Taylor (2001) supports HACPP systems that can be implemented by any company regardless of the size of company. However, its implementation will not only reap benefits but may also cause some burden

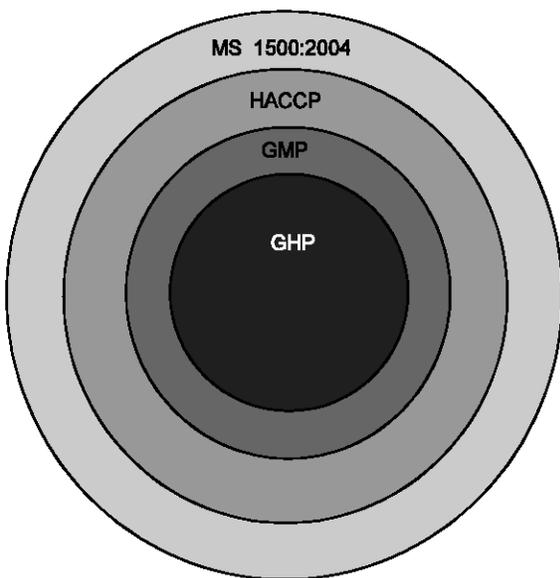


Fig. 1: MS1500:2004 is covering the international standards requirement

on food companies depending on their sizes, resources, incentives received, funds, training, management support and other relevant factors. Moreover, Taylor (2001), has listed some of the factors that may burden the company when it adopts the HACCP systems, especially an SME, that includes; *Change; Expertise; Time and Money; Documentation; Validation; Verification and Supplier Vetting.*

Likewise, with the correct application of the HACCP implementation it would definitely award the company a lot of benefits. For instance HACCP benefits include *Confidence; Reduced Cost; Focus; Team Building; Legal Protection and Trading Opportunities* (Taylor, 2001). However, if the burden is not too well managed especially by small companies the benefits of the HACCP will evaporate. Supported by Taylor and Kane (2005), HACCP can achieve by SMEs if they are provided sufficient guidance and support in a context of general consensus of the HACCP terminology and requirements.

Referring to Konecka *et al.* (2005), enforcement by the Polish government in the implementation of HACCP by food industries is necessary. The reason for this is that when the larger companies implement this system for export purpose, they also maintain consumer confidence. The writers also listed several factors which support the HACCP implementation by Polish food processing industries and they include: (i) regionalization-province; (ii) production profile; (iii) the size of a plant and the period of its operation and (iv) exports to European countries.

**HACCP's Principles:** Referring to Food and Drug Administration, FDA (2001), traditionally to ensure that

food is safe, the industrial regulatory body conducts spot-checks on manufacturing conditions and conduct random sampling of final products. However, this approach tends to be hasty rather than preventive and can be less efficient than the HACCP system. FDA (2001) lists some advantages of the HACCP implementation which are : (i) focus on identifying and preventing hazards from contaminating food; (ii) is based on sound science; (iii) permits more efficient and effective government oversight, primarily because record keeping allows investigators to see how well a firm is complying with food safety laws over a period rather than how well it is doing on any given day; (iv) places responsibility for ensuring food safety appropriately on the food manufacturers or distributors; (v) helps food companies compete more effectively in the world market and (vi) reduces barriers to international trade.

Generally, HACCP implementation consists of seven principles. According to FDA (2001), the seven principles are; (i) analyze hazards; (ii) identify critical control points; (iii) establish preventive measures with critical limits for each control point; (iv) establish procedures to monitor critical control points; (v) establish corrective action to be taken when monitoring shows that a critical limit has not been met; (vi) establish procedures to verify that the system is working properly and (vii) establish effective record keeping to document the HACCP system.

**Food hygiene practice:** Food hygiene practices are encouraged to be strictly followed by food manufacturers in producing their food products as such practices prevent unhealthy and unhygienic conditions during production operations. They also provide good guidelines, understanding and raises awareness of the standards needed to be observed in food processing by manufacturers and their employees. These in turn are important so as to gain, raise and maintain consumer confidence and eventually will then bring in product acceptability and profits.

Firstly training and education are needed to be implemented to create awareness of personal hygiene among employees before the existing process could be effective. Supported with research findings by Konecka *et al.* (2005), it was exposed that 84% of Poland's food processing plant provided GHP training for their employees. Moreover, it had a correlation between training provision and plant size, where, a bigger plant employing a large number of workers, the more often GHP training is organized for its employees. The result indicated that, small enterprise did not provide training in GHP/GMP for their employees, because they did not invest as much into the realization of hygiene principles as confirmed by the medium and large companies that did (Konecka *et al.*, 2005).

Moreover, studies of knowledge level of GHP/GMP rules and application at food production and processing plants in Poland, showed outstanding results of 91% of the plant employees declared being familiar with the rules and practical knowledge required for efficient production. On the contrary, 9% of the employees from the plant surveyed disclosed that they did not fully implement GHP/GMP. In addition, larger enterprises have good knowledge and understanding of GHP/GMP rules if compared to small plant employees who tend to not fully be aware of the rules (Konecka *et al.*, 2005).

**General principles of food hygiene:** As coded, MS1514:2001, this standard is used to identify the essential principles of food hygiene that are applicable throughout the food chain, including the processing which starts from the primary production stage to the final consumer. However, the main purpose of this standard is to achieve the goal in ensuring that food is safe and also suitable to be consumed by human beings (SIRIM, 2005). On the other hand, it also provides guidance for specific codes which may be needed for different sectors of the food chain processes or commodities; in order to amplify the hygiene requirement specifics to for those areas. Moreover, it also provides information on health education which affectively communicates the principles of food hygiene to industry and consumers and as well as being internationally recognized.

Food processing industry is encouraged to implement hygiene practices in plants whatsoever, but in Malaysia, they are not stated as mandatory regulations but their implementation will able to gain a positive result in the market. According to SIRIM (2005), some of the hygiene principles covered is as follows;

- Primary production-Environmental hygiene; Hygienic production of food sources; Handling, storage and transport; Cleaning, maintenance and personnel hygiene at primary production.
- Establishment: Design and facilities-Location; Premises and rooms; Equipment; Facilities;
- Control of Operations-Control of food hazards; Key aspects of hygiene control system; Incoming material and requirement; Packaging; Water; Management and supervision; Documentation and records; Recall procedures.
- Establishment: Maintenance and sanitation-Maintenance and cleaning; Cleaning programmes; Pest control systems; Waste management; Monitoring effectiveness.
- Establishment: Personal hygiene-Health status; Illness and injuries; Personal cleanliness; Personal behavior; Visitors.
- Transportation-General; Requirement; Use and maintenance.
- Product information-Lot identification; Product information; Labeling and

- Training-Awareness and responsibilities; Training programs; Instruction and supervision; Refresher training.

**Malaysian halal food standards:** According to JAKIM (2008b), the Malaysian Standard of preparing halal food, MS 1500:2004, which refers to "Halal Food: Production, Preparation, Handling and Storage-General Guidelines" was developed under the Malaysian Standards Development System and with the responsibility of the Department of Standards Malaysia, Ministry of Science, Technology and Innovation. Halal standard is one of the initiatives of the Malaysia Government to realize the plan for Malaysia as a Halal Food Hub. Its development also involved various organizations including Department of Islamic Development Malaysia, JAKIM (SIRIM, 2005).

The halal standard prescribes a guideline for the food industries in their halal food preparation and handling. It also provides a basic requirement for food products, food trade and food business in Malaysia. The halal standard should be used together with MS 1480 and MS 1514. Furthermore, this standard is used by JAKIM as a basis for the process of halal accreditation and certification. However, its implementation needs to be supplemented by other requirements of the certification process (JAKIM, 2008b; SIRIM, 2005; Norlia, 2008).

The effectiveness of standards achievement can result in efficiency, high productivity and competitiveness in business as well as the beneficial qualities for consumer protection (Department of Standard Malaysia 2008). This standard would be a comprehensive standard, if incorporated with the requirement of the concept of Halal, HACCP, GMP and GHP (SIRIM, 2005; IMP3, 2006; Lokman, 2008; Norlia, 2008). However, there is no research into the issue of the Malaysian Halal Standard, as well as HACCP, GHP and GMP in the aspect of their implementation in Malaysia. According to Mariam (2008), many research areas into the Malaysian Halal Standard will be able to explore accordingly as to whether the standards are related to the environment of food processing industry in Malaysia. On the other hand research findings will encourage the contribution to improve Malaysia's food industry. Moreover, with reference to some literature reviews, it is shown that the halal issues are continuously studied but most of them only concentrated on the field of marketing. Of late, most researchers are discussing on halal market opportunities, halal commodities trading, customer perception on halal products, readiness of SMEs in branding their halal products and halal certification such as by Sabariah (2006); Shahidan and Md Noor (2006); Mohammad Noorizzuddin *et al.* (2007a); Nuradli Ridzwan Shah *et al.* (2007); Yaakob *et al.* (2007) and Norlia (2008).

The halal food standard, MS1500:2004, includes seven main areas as stated in *Malaysian Standard Handbook*

on Processes in the Food Industry as a guidance to halal food manufacturers in Malaysia. The standard range covers aspects of (SIRIM, 2005); (i) Normative reference -MS1480 and MS1514 and Guidelines on good hygiene practices for small and medium scale food industries towards HACCP; (ii) Definition-*Shariah* Law; Halal; Halal Food; *Najis*; Slaughtering; Competent Authority; Islamic Authority; (iii) Requirements-Sources of halal food and drinks; Slaughtering; Product processing, handling and distribution; Product storage, display and servings; Hygiene, sanitation and food safety; Packaging and labeling; Legal requirement; (iv) Compliance; (v) Halal certificates and (vi) Halal certification mark.

Lokman (2008) states that, halal food manufacturers should abide to JAKIM as the authorized body in assuring the halal standard. As it is pointed out, the comprehensiveness of halal certification system was developed by JAKIM involving specific procedures in slaughtering, processing and other related operations as recommended by the Islamic law.

**The halal inspection:** Referring to Lokman (2008), halal inspection teams should consist of a combination of experts in *Shariah* laws and food technology. Team members should conduct site inspections in accordance to the halal certificate application after applicants submit all the documents needed by JAKIM to evaluate before proceeding to the premise inspection and the inspection will only be comprehensive if conducted by a team. The inspection should cover all raw materials and finished products, storage, cold rooms, processing plant, manufacturing flow and the handling aspect during production and general hygiene, packaging materials, quality control and assurance practice (Lokman, 2008; Norlia, 2008). They should also inspect the production process to ensure it does not get exposed to any contamination with *Najis* either during production or storage.

Supported by Yaakob *et al.* (2007), the halal concept and requirements are conducted comprehensively whereby the halal requirements work starts from "Farm to Plate". The framework of the halal food supply chain is shown in Figure 2. The halal standards actually start from the farm stage and it continues to the next levels right through to the whole production processes until the product goes into the customers' hands. Because of that, the halal concept and standard is also recognized as a broad based system or a comprehensive standard that concentrates on the aspect of quality, wholesomeness, safety and health (MATRADE, 2005; Jafri, 2006; Riaz, 2007; Mariam, 2008; Norlia, 2008). Generally, the process of halal food certification begins when manufacturers, exporters or the food industries submit their application to JAKIM (Federal Islamic Authorities) or JAIN (State Islamic Authorities) for halal food certification. Completed documents are needed to

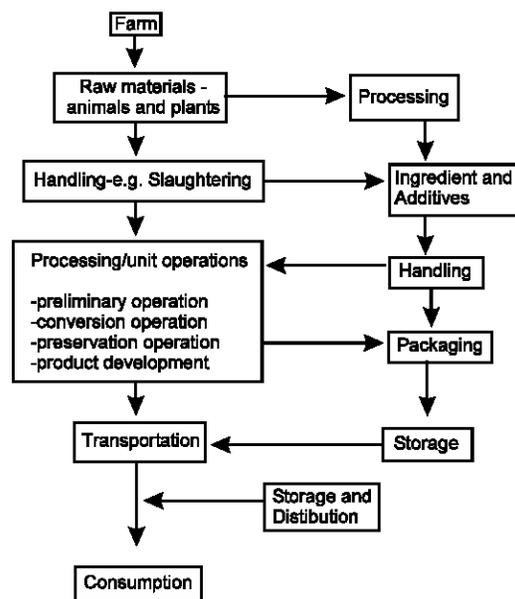


Fig. 2: Comprehensive halal food supply chain  
Sources: Adapted from Yaakob *et al.* (2007)

be submitted before JAKIM issues the halal certification. The document need to specify to the requirements of detailing the ingredients, name/s and address of manufacturer/s or supplier/s of ingredients, original halal status of ingredients such as the halal certificate from the recognized Islamic bodies or product specification, manufacturing processes and procedures such as HACCP and GMP (Lokman, 2008). This shows that, the process of getting halal certification it not a simple task as perceived by the public and it is a rather complicated process in order to have the certainty and credibility in all aspects, starting from input to customer.

**Halal certification:** Another issue related to the halal standard is about halal certification. Malaysia as a pioneer in promoting halal food globally has developed a system for halal certification. This achievement has become an example for other nations and has been recommended by the United Nations as a model system (MATRADE, 2007; Department of Standard Malaysia, 2007). Furthermore, Malaysia and Indonesia are the only countries that have formal programmes to approve the halal certifying organization (Riaz, 2007). Clarification by MATRADE (2007) indicated that the halal certification is just not only an Islamic religious requirement but on the other hand, it is especially for the halal food manufacturers who must remain strict for cleanliness and quality control. At the same time, they can use only the inspected raw materials, intermediate goods and all equipment that is used follows *Shariah* law in ensuring halal standard requirements are met (MATRADE, 2007; Lokman, 2008).

According to Shahidan and Md Nor (2006), most manufacturers and marketers use halal certification and logo as a way to inform and to gain consumer confidence that their products are halal and are in compliant to *Shariah* law. Moreover, Malaysian Muslims especially, are very concerned for the confirmation of the status of halal products and the status of halal certification. These are more important than the other types of certification (Shahidan and Md Nor, 2006). Generally, they are looking for the halal products that are certified by the Malaysian Islamic authorities or a body known as Department of Islamic Development Malaysia (JAKIM) under the preview of the Ministry in the Prime Minister's Department (Shahidan and Md Nor, 2006; Mohammad Noorizzuddin *et al.*, 2007a).

The required halal status is supported by the research done by Mohammad Noorizzuddin *et al.* (2007a) in their research on the factors that influence consumer halal product purchases. Research findings indicate that, 975 respondents believe that the halal certification is important in their observation of practicing the halal concept.

Furthermore, research findings also concluded that, the most important finding relates to the halal certification is; "consumers are demanding that the SMEs get the halal certification and that entrepreneurs should grab that opportunity because the halal certification would be a contributing factor in consumer purchase decisions and failure to get the halal certification would be a comparatively big disadvantage for the SMEs".

There are eleven factors that contribute in influencing consumers to buy halal products in Malaysia. The eleven factors identified include *Promotion, Place, Attractiveness and Quality, Halal Certification, Price, Product Samples, Market Demands, SME Producers, Halal Certification by Muslim Companies, Difference between Halal Certified and Non Certified and Clean Operations* (Mohammad Noorizzuddin *et al.*, 2007a).

One of the Malaysian government's actions in handling the issue of halal certificate is to monitor the halal certification process. Malaysia has divided the process (evaluating documents and site inspections) of halal certification into two constitutions i.e., Federal and State Islamic Agencies. In terms of fulfillment of the objectives of standardization, there is much needed harmonizing and streamlining between both these Islamic agencies. However, in achieving harmonization there is the dependence on the agencies capacity of upgrading, which includes the services of auditors and inspectors (IMP3, 2006).

Indication by Mohammad Noorizzuddin *et al.* (2007a), refers to consumer demands and therefore halal products need to be monitored from any fraudulence. Furthermore, manufacturers who commit any fraud on their halal certificates should be penalized accordingly.

Therefore, in that perspective Malaysian consumers believe that the halal certification should not only be given to *Bumiputera* companies but to other Malaysian *Non-Bumiputera* companies without compromising that the halal products are meant exclusively for Muslims. This implies that the halal certification is for all and not confined to *Bumiputera* manufacturers and Muslim consumers only (Mohammad Noorizzuddin *et al.*, 2007a). Moreover, to Muslim consumers, products which carry the halal logo are more meaningful and more important comparing to those carrying ISO or similar certification (Shahidan and Md Nor 2006). Figure 3 shows the Malaysian Halal logo and other Islamic body logos in different countries that are recognized by the Department of Islamic Development Malaysia (JAKIM, 2008a).



Fig. 3: Malaysia and apart of Islamic Bodies Halal Logo which recognized by JAKIM Sources; Adapted from Halal Hub Division, JAKIM (2008a)

**Conclusion:** Quality standards and assurances are important and give an impact on the business cycle stages. Combinations of aspects of standards, which meet the international and local requirements, need to achieve and be set as goals in expanding business success in the market. Whatsoever, the standards, rules, guidance and laws are developed to prevent abnormal practices or to ensure that the products or services meet the global market requirements, quality and of course at the same time reducing the production costs and indicate good business reputation. As discussed above, the halal concept is a basic and a broad system certifying and proving the importance of

identification of raw materials, ingredients and products based on quality and safety consideration and not only focusing on meat and poultry produce but also on other consumer items (Lokman, 2008; Riaz, 2007; Riaz and Chaudry, 2004; Department of Standard Malaysia, 2007). Furthermore, the halal concept is not only a symbol for the Islamic religion but it also a suitable and practical standard system for the use of all nations. According to previous research, it has been found that this concept is a comprehensive standard and recognized as a new concept in marketing as well as a quality benchmark. Essentially, the halal concept comprises quality, wholesomeness, safety, health and hygiene. Today, Western countries or minority Muslim countries are aware of the halal approach as a huge potential for a global halal market. This is due to the rise of the Muslim world population and also not limiting to Muslim consumer purpose (Riaz, 2007).

For assurance purposes the products are in compliance with the *Shariah* law especially with regards to foodstuff, Malaysia has developed a halal standard that is known as MS1500:2004. Malaysia is also recognized as pioneer in halal standards and cited by Codex Alimentarius Commission as the world's best example in terms of justifying halal food. However, this standard can also be applied together with the other international standards required by food industries such as HACCP, GHP, GMP and ISO. The combination and certification received whether from JAKIM or other recognized agencies can help the products to be accepted, allowed to penetrate into the market and also boost the global market. A tight regulation for all food processing standards is required by the Malaysian Standard and, each standard will complement the other as a prerequisite in the implementation. Moreover, halal certification and logo can also support as well as increase consumer confidence that food products consumed are of quality, safe, hygienic and halal.

Producing quality halal products by incorporating the halal standard and other quality standards will support halal food products which will be not only be in demand in the domestic but also in the international markets. Finally, with some explanation regarding to the standards in Malaysian food industry especially in the aspect of halal standard and international standards (HACCP, GHP and GMP) it is hoped that Malaysia will be able to show how essential it is for it to become the Global Halal Hub.

## REFERENCES

Agriculture and Agri-Food Canada. Halal Food Products: Market Report. June 2006. [http://atn-riae.agr.ca/asean/4282\\_e.pdf](http://atn-riae.agr.ca/asean/4282_e.pdf) [11 September 2007].

Codex Alimentarius Commission, 2006. Information on National Food Control System and Consumer Participation in Food Standard Setting. [http://www.codexalimentarius.net/download/report/667/al30\\_32e.pdf](http://www.codexalimentarius.net/download/report/667/al30_32e.pdf) [13 March 2008].

Department of Islamic Development Malaysia (JAKIM). Halal Hub Division, 2008a. Islamic Organizations Recognized by JAKIM. 7 January 2008. <http://halaljakim.gov.my/montaj/badanislamterkini.pdf> [2 April 2008].

Department of Islamic Development Malaysia (JAKIM). Halal JAKIM Portal, 2007. <http://www.halal.gov.my/index.php> [20 August 2007].

Department of Islamic Development Malaysia, JAKIM, 2008b. Malaysian Standard on Halal Food : MS 1500: 2004. [http://www.halal.gov.my/corporte.php?ID=116&parent\\_id=77](http://www.halal.gov.my/corporte.php?ID=116&parent_id=77) [18 March 2008].

Department of Standard Malaysia (DSM), 2008. What is the Malaysian Standard? <http://www.standardsmalaysia.gov.my/faqsFolder/> [2 April 2008].

Department of Standard Malaysia (DSM), 2007. Positioning Malaysia as Halal Hub to Promote Tourism in *Standards and Accreditation News: Standard in Tourism*. Issue 21 September 2007. <http://www.standardsmalaysia.gov.my>. [31 March 2008].

Food and Drug Administration (FDA). HACCP: A State-of-the-Art Approach to Food Safety, 2001. <http://vm.cfsan.fda.gov/~1rd/bghaccp.html> [12 September 2007].

Government of Malaysia, 2006. Third Industrial Master Plan 2006-2020 (IMP3). National Publication Berhad. Kuala Lumpur.

Islamic Food and Nutrition Council of America (IFANCA). What is Halal? <http://www.ifanca.org/halal/> [23 August 2007].

Jafri Abdullah, 2006. Malaysia Hub Pengeluaran Produk Halal: Potensi dan Cabaran. *J. Halal*, 1: 27-37.

Jin, S., J. Zhou and J. Ye, 2008. Adoption of HACCP system in the Chinese Food Industry: A Comparative Analysis. *Food Control*, 19: 823-828.

Konecka-Matyjek, E., H. Turlesjska, U. Pelzner and L. Szponar, 2005. Actual Situation in the Area of Implementing Quality Assurance Systems GMP, GHP and HACCP in Polish Food Production and Processing Plants. *Food Control*, 16: 1-9.

Lokman Ab Rahman, Shariah and Malaysia Halal Certification System. Paperwork presented in Halal Food Seminar, 2008. Universiti Sains Islam Malaysia (USIM), 9 January 2008.

Malaysia External Trade Development Corporation (MATRADE), 2007. Key Export Industries: Processed Food. <http://www.matrade.gov.my/msianproducts/keyExpProcess.htm>. [20 August 2007].

Mariam Abdul Latif, 2008. Nutrition and Research in Halal Food. Working Paper presented at Halal Food Seminar, 2008. Universiti Sains Islam Malaysia. 9 January 2008.

- Riaz, M.N. and M.M. Chaudry, 2004. Halal Food Production. CRC Press LLC. United States of America.
- Riaz, M.N., 2007. Halal Food Production for the Cereal Industry and the Halal Certification Process. *Cereal Foods World*. ProQuest Central. July/August. 52: 192-195.
- Ministry of Health Malaysia (MOH), 2008. Department of Food Safety and Quality. [http://fsq.moh.gov.my/modules/xt\\_conteudo/print?id=19](http://fsq.moh.gov.my/modules/xt_conteudo/print?id=19) [2 April 2008].
- Mohamad A Shukor, 2004a. The Challenges in Building A Safe and Sustainable Food Industry. Policy and Development: The Multi-Disiplinary Bulletin Focusing on Managing and Development and Perspectives on National Issues. *INTAN*. 1: June: 29-35.
- Mohamad A. Shukor, 2004b. The Importance of Standards to The Food Industry in Meeting the Challenges of Globalisation. Policy and Development: The Multi-Disiplinary Bulletin Focusing on Managing and Development and Perspectives on National Issues. *INTAN*. 1: June:123-129.
- Mohammad Noorizzuddin Nooh, Norhaizah Nawai, Nuradli Ridzwan Shah Mohd Dali and Hartini Mohammad, 2007a. Halal Certification: What the SME Producers Should Know? 1<sup>ST</sup> Entrepreneurship and Management International Conference (EMIC), Kangar Perlis, Malaysia, 5-7 December 2007. <http://www.geocities.com/mohdddalins/halalsme.pdf> [3 March 2008].
- Mohammad Noorizzuddin Nooh, Norhaziah Nawai, Nuradli Ridzwan Shah Mohd Dali and Hartini Mohammad, 2007b. Halal Branding: An Exploratory Research Among Consumers in Malaysia. Proceeding of 3<sup>rd</sup> United International Business Management Conference, Melacca, 16-18 December 2007. <http://www.geocities.com/mohdddalins/halalbranding.pdf> [13 March 2008].
- Muslim Population Worldwide. <http://www.islamicpopulation.com> [1 July 2008].
- Norlia Musa, 2008. Innovation and Competitiveness through Halal Certification. 13<sup>TH</sup> International Conference on ISO9000 and TQM, Subang Kuala Lumpur, 24-26 March 2008. Paper number 03-08.
- Nuradli Ridzwan Shah Mohd Dali, Suhaila Sulaiman, Akmaliah A Samad, Nurbaiti Ismail and Siti Hajar Alwi, 2007. Halal Products From the Consumers Perception: An Online Survey. E-Proceeding of The Islamic Entrepreneurship Conference (iCEPS). Kolej Universiti Islam Malaysia. 19-21 January 2007. <http://www.geocities.com/mohdddalins/no13.pdf> [31 March 2008].
- Orriss, D. G. and J.A. Whitehead, 2000. Hazard Analysis and Critical Control Point (HACCP) as a Part of an Overall Quality Assurance System in International Food Trade. *Food Control*, 11: 345-351.
- Peri, C., 2006. The Universe of Food Quality. *Food Quality and Preference*. 17: pp: 3-8.
- Sabariah Din, 2006. Trading halal commodities: opportunities and challenges for the muslim world. *Siri Syarahan Perdana Professor*. Penerbit UTM. <http://www.penerbit.utm.my/syarahan/pdf/siri22.pdf> [7 March 2008].
- Shahidan Shafie and Md Nor Othman, 2006. Halal Certificate: An International Marketing Issues and Challenges. [http://www.ctwcongress.de/ifsam/download/track\\_13/pap00226.pdf](http://www.ctwcongress.de/ifsam/download/track_13/pap00226.pdf) [13 March 2008].
- Standard and Industrial Research Institute of Malaysia (SIRIM) 2005. Malaysian Standard Handbook on Processes in the Food Industry: standards on Halal Food, HACCP, Food Hygiene and Guidelines for ISO 9001 for Food and Drink Industry. SIRIM Berhad. Malaysia.
- Sumali Amat, 2006. Halal-New Market Opportunities. The 9<sup>th</sup> Efficient Consumer Response (ECR) Conference, Kuala Lumpur Convention Center (KLCC), Malaysia, 15 November 2006. <http://www.islam.gov.my/portal/lihat.php?jakim=2140> [9 November 2007].
- Taylor, E., 2001. HACCP in Small Companies: Benefits or Burden? *Food Control*, 12: 217-222.
- Taylor, E. and K. Kane, 2005. Reducing the Burden of HACCP on SMEs. *Food Control*, 16: 833-839.
- Trade Mart: A Malaysia External Trade Development Corporation (MATRADE) Publication for Malaysian Exporter. The Global Halal Market: Untapped. December 2004-January 2005:9-10. <http://www.matrade.gov.my> [31 March 2008].
- Trienekens, J. and P. Zuurbier, 2008. Quality and Safety Standards in The Food Industry, Developments and Challenges. *Int. J. Prod. Econ.*, 113: 107-122.
- Yaakob Che Man, Jamil Bojei, Awis Qurni Sazili and Ahmad Nizam Abdullah, 2007. Halal Hub Opprotunities. Proceeding in 4<sup>th</sup> Asian Livestock and Feed Industry Conference. (Slide) 25 October 2007. Kuala Lumpur. [http://www.livestockasia.com/conference\\_paper/slide/yaakob.pdf](http://www.livestockasia.com/conference_paper/slide/yaakob.pdf) [7 March 2008].