GENETICALLY MODIFIED (GM) CROPS & HALAL WORKSHOP REPORT

WORLD HALAL FORUM 2010

22 JUNE 2010

KUALA LUMPUR CONVENTION CENTRE

CONTENTS

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ACKNOWLEDGEMENT

The World Halal Forum Secretariat acknowledges the valuable support and guidance from the Malaysian Biotechnology Information Centre (MABIC), in making this workshop a success.

The Malaysian Biotechnology Information Centre (MABIC) is a registered not-for-profit organization with an NGO status in Malaysia. MABIC is the first and only NGO that promotes biotechnology in Malaysia and enjoys excellent working relationship with ministries, government agencies, research institutes, universities, trade organizations, embassies and high commissions, media, industry and farmer organizations. MABIC's mission is to provide scientifically accurate and fact-based resources to all stakeholders and support the government's efforts in developing the biotechnology sector and in creating a biotech-literate society. Over the years, MABIC has remained as the single most active organization in creating public awareness and addressing key issues in biotechnology to Malaysian stakeholders. MABIC's parent institute is International Service for the Acquisition of Agribiotech Applications (ISAAA). And it is part of an international network of 20 countries under the Global Knowledge Centre of ISAAA.

MABIC
MALAYSIAN BIOTECHNOLOGY INFORMATION CENTRE

For more information about MABIC, please visit: www.bic.org.my

EXECUTIVE SUMMARY

Genetically Modified Crops & Halal Workshop held on the second day of the 5th World Halal Forum 2010, sought to begin discussions on the Islamic stance of Genetically Modified Food. At the end of the workshop panelists and participants unanimously agreed to the following statement:

RESOLUTION

A. Biotech crops and products have undergone intensive food and environment safety tests and are acceptable in the Islamic world as Halal, provided the sources are Halal.

B. Biotechnology awareness building strategies that would encourage and improve public participation in the decision-making process on biotechnology-related issues.

C. Biotechnology awareness and education programs need to be established by private and public sectors to increase biotechnology perception in the country.

D. The role of Islamic scholars (*Ulama*) in scientific discussions involving the developments of biotechnology, in particular the production of food derived from genetically modified crops must be enhanced.

INTRODUCTION

1. The World Halal Forum is the premier global Halal industry event. A platform for stakeholders in the Halal industry to gather and charter the way forward for the industry as a whole. The 5th World Halal Forum, 21 & 22 June 2010, held in Kuala Lumpur attracted over 800 delegates from 37 different countries, with delegates ranging from government, industry, academia and Shariah, certification bodies and NGOs. Other WHF programmes include: WHF Industry Dialogues (held in over 6 countries from 2007), WHF Promotional Tours (held in over 15 countries), WHF CEO Roundtables and Industry briefings. These programmes are to provide specific insights into a particular sector or region.

2. On the second day of the 5th World Halal Forum, the plenary spilt into two parallel sessions. The first session was a workshop on 'Marketing Halal Products'. The second workshop that is the focus of this report was on 'Genetically Modified Crops & Halal' sought to begin discussions on the Islamic stance of Genetically Modified Foods. This issue is becoming increasingly pertinent with the rise of global of food security issues and the potential of GM technology to complement the existing agricultural practices. This roundtable featured expert presentations, panel discussions and comments from Shariah experts. The Workshop programme can be found in **APPENDIX 1.**

3. This workshop attracted over 90 participants, far exceeding the secretariat expectation and room size capacity. The secretariat attempted to note all the attendees' names and details, but due to the large size, this became difficult. Please see **APPENDIX 2** for the partial attendance list.

4. This report has been produced 'verbatim' in some parts to fully capture the essence and intent of participants.

5. Speakers' and Panellists' profiles can be found in **APPENDIX 4** and additional comments from the secretariat in **APPENDIX 5**.

SESSION 1 – OPENING AND PRESENTATIONS

INTRODUCTION BY MR. DARHIM HASHIM, CEO INTERNATIONAL HALAL INTEGRITY ALLIANCE, MALAYSIA

1. Mr. Darhim Hashim welcomed all participants to the session and introduced the speakers and panellist to the audience.

WELCOME REMARKS BY DR. ANWAR NASIM, ORGANIZATION OF THE ISLAMIC CONFERENCE STANDING COMMITTEE ON SCIENCE AND TECHNOLOGY (COMSTECH), PAKISTAN - SESSION CHAIR

2. Dr. Anwar Nasim began the session by explaining that within the 57 OIC countries, there are currently two organisations that deal with science and technology; Standing Committee for Scientific and Technological Cooperation (COMSTECH) in Islamabad, Pakistan and, Islamic Educational, Scientific and Cultural Organization (ISESCO) in Rabat, Morocco.

3. The aforementioned organisations not only focus on science but also culture, and have been organizing workshop events that directly relate to ethics that apply to all disciplines of science, GMO and reproductive biology. The main issue that has always been highlighted is the need to bring scientists and religious scholars together to discuss ideas and share their knowledge. This would also enable both parties to understand and appreciate each other's perspectives and concerns.

4. Scientists are now able to manipulate DNA in new evolutionary and radical ways. One such example was moving genes from bacteria to cotton successfully to improve the crop.

5. Dr. Anwar Nasim welcomed the delegates and speakers to the session and expressed his aspiration for the session to be a useful exercise for interactive and participatory discussion.

SUMMARY OF PRESENTATION 1: DR. JOHN BENNETT, INSTITUTE OF BIOCHEMISTRY, MOLECULAR BIOLOGY AND BIOTECHNOLOGY, UNIVERSITY OF COLOMBO, SRI LANKA - THE RISE OF GMO CROPS AND THEIR IMPACT

6. Dr. John Bennett explained that his direct experience were on GM rice and rice improvement. During his presentation he highlighted the differences between plant and animal gene structures and touched on traditional and modern plant breeding methods. Keeping GM regulation science based, ensuring the safety of GM crops and making GM crops affordable are the three main issues currently faced by the industry.

7. He also explained that GM crops have three major uses; gene discovery, crop improvement and molecular pharming. He went on to add that standardized tests of food and environmental safety are essential for achieving consumer acceptance and that regulatory and IP costs must be kept realistic to ensure safety while allowing GM crops to benefit the rural and urban poor, especially in developing countries.

SUMMARY OF PRESENTATION 2: DR. BEHZAD GHAREYAZIE, CENTER OF STRATEGIC RESEARCH, IRAN - GLOBAL STATUS OF BIOTECH CROPS: BENEFITS TO DEVELOPING COUNTRIES

8. Dr. Behzad Ghareyazie's presentation emphasized the importance of food security and poverty, benefits of biotechnology, the global status of GM crops, GM crop in developing countries and the Islamic view on GM crops.

9. In regards to pig gene transfer, Dr. Behzad Ghareyazie stated that there has been no biotech crop (for food and feed purposes) in the market with any gene transferred from any animal, including that of pig, in any country.

10. Dr. Behzad Ghareyazie continued to point out that biotechnology can make a difference in agriculture and developing countries should develop the capacity to gain greater benefits from it and make it a priority in the food and agriculture sectors. He concluded by expressing that Islam encourages scientific innovations and emphasizes all Muslims to try to have access to technologies.

SUMMARY OF PRESENTATION 3: DR. HANI AL-MAZEEDI, KUWAIT INSTITUTE FOR SCIENTIFIC RESEARCH, KUWAIT – ISLAM AND GMO

11. Dr. Hani Al-Mazeedi began his presentation by providing the definition of GMO and its effect on food, and stated that there has been no scientific evidence that proves GM foods to be harmful to human health. In addition to being concerned with the safety aspect of GMOs, consumers are more worried about the sources of their DNA material, whether they are Haram or Halal, and this lead to the importance of accurate labelling on GM food products.

12. During the presentation, Dr. Hani Al-Mazeedi provided the principles of Halal (lawful) and Haram (forbidden) on GMOs, as guided by the Qur'an and Hadith:
    i) it does not contain any parts or products of animal origin which are forbidden in Islam, as well as of animals that are permissible in Islam but not slaughtered according to Islamic law;
    ii) it does not contain any component of *najs*, or produced by tools or equipment contaminated by *najs*;
    iii) it is safe and not harmful;
    iv) its raw ingredients do not contain derivatives from human being; and
    v) during preparation, processing, packaging, storage and transportation Halal products are separated from any other product that does not meet the conditions mentioned above.

13. Dr. Hani Al-Mazeedi continued by stating that GMO products are lawful if they originate from lawful sources, and it is Haram, or highly questionable, if they originate from unlawful sources akin to genetic material from unlawful animals such as pigs or dogs. However, an unlawful GMO product may become lawful in times of emergency, such as to avoid starvation or an illness leading to death. At present, most food, cosmetics and medicinal products do not meet the emergency criteria, as there are alternative sources available.

Note: All speaker presentations are available for delegates to download at: www.worldhalalforum.org

SESSION 2 - SUMMARY OF Q&A DISCUSSION

Q1: On the issue of food security and poverty, a question from the floor asked the relationship between poverty and food security in relation to GMO and if the industry is advocating GM products. In the case of the Philippines, the country is active in GMO but poverty is not an issue there, therefore, why is the industry advocating GM products if the intention is food security and poverty?

A: Dr. Behzad Ghareyazie responded by first stating the question to be out of the scope of the session but agreed with the questioner's view nonetheless. He continued by saying that if we distribute the food that is available now, perhaps the number of hungry people will be reduced. However, even with the right distribution it will not guarantee that all food will be available. The global population would still require more food or a certain standard of food, which might not be available and is another issue. Dr. Behzad Ghareyazie continued by agreeing to the relationship between poverty elevation and the use of biotechnology. He gave the example of Argentina and Brazil, where there have been studies showing net benefits enjoyed by farmers and consumers. Another example is India, which was a net importer of cotton before biotechnology was introduced and is now the largest producer and exporter of cotton.

Q2: Touching on Dr. Hani Al-Mazeedi's presentation, a delegate asked what is position of all *ummah* regarding GMO?

A: Through Dr. Hani Al-Mazeedi's translation, Dr. Mohammad Al-Motairan said that there was a conference held in Kuwait recently, which was sponsored by the Medical Islamic Organisation where they have tackled the issue of using genes from Haram sources. The issue was discussed and deliberated with no unanimous agreement on the matter, as the issue was not familiar during the time to the earlier *hakim*. However, it was found that most people agreed with the views presented on GMO, which were covered in the presentation today by Dr. Hani Al-Mazeedi.

Q3: Three points were raised by one of the delegates:

i) Cloning which is part of modern biotechnology has several issues. One example is the mule, a cross between the donkey and the horse, which is very efficient but totally sterile and not able to reproduce;

ii) After conducting extensive research on the topic of GM on the internet, there are many references available that stated GM was not safe for animals. Though it was mentioned that were no cross breeding in animals and gene therapy but there have been references to the contrary, whether it is for commercial use or otherwise is not clear; and

iii) There has been a study recently concerning GM in cat food that have caused adverse affects towards the health and nerve system of cats when they consume it. This raises concerns to the consumers and there is a reason why Canada, Europe and France have banned GM because there is not enough evidence to show that GM foods are safe for human consumption but there have been substantial evidence on them being bad for animals and cause internal organ damage.

A: Dr. Anwar Nasim responded by saying that the debate on safety has been going on for long time but ultimately, he expressed that in the end it is the choice of the consumer. He then reminded the audience that the session was aimed to address the Islamic point of view and it is best to keep the debate on commercial food and health concerns faced by society separate to the current discussion.

A: Dr. Hani Al-Mazeedi added to the discussion the example of the microwave. In the past, there was much debate of the safety of the use of microwave but there was no science-based evidence to prove it. This is similar to the debate with GM, where there was much misinformation but no credible proof by recognised institutions. In the European Union, there is regulation for labelling of GM food but not in the United States.

Q4: A delegate opened his query by first stating that GM for plants was a fantastic endeavour despite the fact that the damage or consequences on the environment were still unknown. He added that cross breeding was also a current issue and there have been pictures of abnormalities in animals resulted from such experiments in Iran. Does Shariah allow such animal experiments?

A: Dr. Behzad Ghareyazie responded by stating that there are a series of concerns coming from the public on such matters. Nonetheless, scientists have dealt with these concerns even before the public has come to know of them. Dr. Behzad Ghareyazie agreed that there is misinformation or incomplete information received by the public and discussion forums such as the World Halal Forum where scientists and *Ulama* have the means to communicate to the public on the right information on safety, regulations, and ethics. According to the World Health Organisation, there is now a need to look into the environmental concerns and GM scientists are increasingly focusing on biodiversity.

Dr. Anwar Nasim reminded the floor to keep safety issues separate to the discussion and focus on GMO in relation to Islamic principles.

Dr. Hani Al-Mazeedi interjected that anything that is grown with the use of *najs* or alcohol but originated from biological nature such as plants or organism, are allowed in Shariah if the end product contains no *najs* material.

Dr. Mohammad Al-Motairan continued by stating that of the transfer of genetic material from one animal to another is acceptable. It is however, prohibited on human beings. In the case of the use of animals in research where the process requires the need to produce abnormalities in normal and healthy animals to reach the end result, it is acceptable only if the animals are taken care of, not abused in any way, conducted for the benefit humankind and done in small/limited numbers.

In addition, laboratories should keep their equipment and processes away from being contaminated with *najs*/Haram sources or products and only use Halal sources. Standards have to be followed and processes will have to be improved for this.

Q5: It was mentioned that there was economic benefit to feeding hungry people. Is there any scientific research or data available to show that if we are able to replace the existing technology in the third world, will the nation then become more prosperous?

A: Dr. John Bennet replied that in relation to intellectual property and scientific discovery, there has been a study conducted in 2006 that looked into India and China in relation to Bt cotton and Bt rice, which were available at reduced prices in the market. In the case of China, it turned out that Bt rice was not insect resistant so the farmers stopped growing it and considered it ineffective and a fake. In India, Monsanto and Mahyco formed an alliance and released Bt cotton for the Indian market; the same exact variety but sold more cheaply. It was equally effective but proved impossible to eradicate from India due to its cheap price. The companies not only stole the crops and not having to produce them themselves, they also had no property rights on them and subsequently achieved great profit. At the same time, the farmers were also benefiting by not having to pay intellectual property mark-ups. This however, is not a long-term solution to improving the insect resistance of crops in India and therefore, there needs to be significant research and scientific experiments in this area.

Q6: In regards to allergens in GM products that cause hyperactivity towards allergens, how does one know if GMO in certain products is *sunat*, Haram or *mashbooh*?

A: Dr. Anwar Nasim answered by saying that people are already allergic to normal and non-GM foods, therefore, one has to live by making the best possible judgement that one has. At the same time, through the use of GM, the causes of allergens can be reduced in foods. When genes are constructed, it's made with purpose and the results are known, and they are made with the intent to help humankind. Ultimately, the aim of this powerful tool is to help humankind and particularly those in developing countries.

Q7: What is the stand on using *najs* in medicine, such as hormones from horse urine in certain prescribed medication that is the only type of medication available?

A: Mrs. Mariam Abdul Latif responded by stating that her first reference in this issue is the Malaysian Standard MS 1500:2009 that explains in Section 3 the requirements of Halal food production. One of the clauses clearly stated that all GMO food and ingredients are all Halal if the sources are Halal. She added that genetic modification is always related to the agriculture sector and so far, has never posed any problems as Malaysia always refer to the standard as well as the Qur'an. Furthermore, we are familiar with the rest of the other sources such as plants, chemicals, microorganisms or other sources that is safe for consumption – not hazardous to health, not poisonous and not intoxicating. These are the main elements principles that guide the process of Halal certification.

She continued to say that GM must be cautiously carried out so that it fulfils the requirements of food safety, food security and provides benefits. If it comes from agriculture, it is thus Halal unless it can be proven through research and scientific findings that the product is hazardous to health or poisonous or intoxicating which then result to it being prohibited. This is also clearly stated in the standard and it also mentions that if the source is taken from a poisonous fish, it is Halal if the poison is removed.

In reality, there is no crisis in this area as food is in abundance. Nonetheless, GM is needed in areas of eradicating disease and reducing problems in food production as these issues are many. One example is the 88 percent crop destruction in Iran due to disease that devastated the livelihoods of many farmers. This highlights the importance of genetic modification and countries need to address these problems. Currently Malaysia has one approved genetically modified product in the market and product labelling here is important as consumers, especially Muslims are very particular on what we/they eat.

Ultimately, there needs to be more research done in this field and the regulatory issues need to be addressed. These include tracing and detection, and import/ export control among others. Consumers have to be educated to read labels, be more informed and not consume products that are doubtful.

Q8: On the subject of intellectual property rights, there is also the issue concerning the origin of genes and whether the country of where the gene originated from has any right toward the gene or crop. For instance, some wheat and barley genes that came from North Iraq, South Turkey, Iran, Syria and Palestine are now mostly owned by the United States through companies such as Monsanto.

A: Dr. John Bennet explained that the traders selling stolen Bt cotton to farmers were doing it illegally and did not have to do any food safety studies. Monsanto and Mahyco however, had to do these studies to the satisfaction of India's regulation. It was not for cotton, which is not a food crop but actually for brinjal for example, that needed food safety assurance. The studies required huge investments. We would like to see these costs come down in order to increase participation from the public sector in producing GM crops.

Prior to 1990s, India did not have an intellectual property system and there was no intellectual property protection in the country. When scientists began introducing and discovering genes, two new features were established – intellectual property rights and piracy regulation. As more and more companies introduced these features, it became more difficult for companies to conduct their research. The disadvantage to these good features is the limitation on companies to do research in countries outside of the country where the project was developed in, as they would come under the protection of buyer piracy laws even though it is for research purposes. As a result, many rice breeders in the public sector have recognized that most great advances in productivity have come only through the free availability and exchange in the public sector. Therefore, countries and governments have to act quickly and bring in the right legislation in order for MNCs and SMEs to participate in this industry. Through these means, breeders' rights have been greatly strengthened and buyer piracy laws are in place. Dr. Bennet went on to express that though it is a serious concern, the industry are handling it.

A: Dr. Behzad Ghareyazie continued the discussion by adding that people commonly perceive intellectual property to be applicable only for big companies and they forget that everyone has the ability to develop, produce and sell their own technology. Moreover, some developing countries tend to oppose technology that consequently results in other people or companies developing them instead, to which they then complain and demand for intellectual property rights. Dr. Ghareyazie recommended that the developing countries rise and collaborate on developing the technology for their usage. He also agreed that bio-piracy was a problem but as mentioned, it is being taken care of in several different international treaties including the genetic resources for food and agriculture lead by FAO.

SESSION 3 - SUMMARY OF CLOSING REMARKS BY DR. ANWAR NASIM AND MR. DARHIM HASHIM.

Dr. Anwar Nasim thanked all the delegates and speakers for the stimulating and informative discussion.

Dr. Anwar Nasim went on to add a few statements that he had compiled from previous meetings on the same topic:

i) GMOs are safe and its use must be continued until it is proven to be unsafe and safety must be monitored at all times.

ii) Haram sources are forbidden and this is very clear and agreed upon by many parties.

iii) Labelling of GMOs is necessary and continued monitoring must be enabled.

WHF provides the opportunity to wake up and be more aware and more vigilant and look at things more critically. Again at the end of the day, most of the decisions are made at the national level and their people have the infrastructure whether it's Malaysia or Iran or Pakistan or wherever. In addition, labelling of GMO is necessary for food directed to Muslim consumers and must be under close supervision by halal certificate providers.

Mr. Darhim Hashim thanked Dr. Anwar Nasim for his formidable job as Session Chairman, discussion and inputs and prepared some points to put on screen for panel to comment.

Dr. Anwar Nasim went through the resolution. After comments and some deliberation, below is the agreed resolution/recommendation.

RESOLUTION

1. Biotech crops and products have undergone intensive food and environmental safety tests and are acceptable in the Islamic world as Halal, provided the sources are Halal.

2. Biotechnology awareness building strategies need to be strengthened that would encourage and improve public participation in the decision-making process on biotechnology-related issues.

3. Biotechnology awareness and education programs need to be established by private and public sectors to increase biotechnology perception in the country.

4. The role of Islamic scholars (*Ulama*) in scientific discussions involving the developments of biotechnology, in particular the production of food derived from genetically modified crops must be enhanced.

CLARIFICATION OF HALAL SOURCES AND NAJS

In reference to Resolution point 1, copied below, the WHF wishes to clarify the 'sources of Halal' and the term *Najs*.

"Biotech crops and products have undergone intensive food and environment safety tests and are acceptable in the Islamic world as Halal, provided the sources are Halal"

This resolution was adopted and agreed by all delegates and panellists.

This paper seeks to provide an elaboration on what is meant by *"..provided the sources are Halal"*

It was clear during the workshop that all delegates, speakers and *Ulama* were in total agreement that if the original sources are haram, then so is the final product.

For food manufacturing and production, below is the reference standard:

Definitions taken from Malaysia Standard: MS 1500:2009 *Halal Food - Production, Preparation, Handling and Storage – General Guidelines 2nd Revision*

Halal food

Halal food means food and drink and/or their ingredients permitted under the Shariah law and fulfil the following conditions:

a) does not contain any parts or products of animals that are non-halal by Shariah law or any parts or products of animals which are not slaughtered according to Shariah law;
b) does not contain *najs* according to Shariah law;
c) safe for consumption, non-poisonous, non-intoxicating or non-hazardous to health;
d) not prepared, processed or manufactured using equipment contaminated with *najs* according to Shariah;
e) does not contain any human parts or its derivatives that not permitted by Shariah law; and
f) during its preparation, processing, handling, packaging, storage and distribution, the food is physically separated from any other food that does ot meet the requirements stated in items a), b), c), d) or e) or any other things that have been decreed as *najs* by Shariah law.

Sources of Halal food and drink

Animals can be divided into two categories:

1. Land Animals

All land animals are Halal as food except the following:

a) animals that are not slaughtered according to Shariah law;
b) *najs al-mughallazah* animal, i.e pigs and dogs and their descendants;
c) animals with long pointed teeth or tusks which are used to kill prey such as tigers, bears, elephants, cats, monkeys etc.;
d) predator birds such as eagles, owls and etc.;
e) pests and/or poisonous animals such as rats, cockroaches, centipedes, scorpions, snakes, wasps and other similar animals;
f) animals that are forbidden to be killed in Islam such as bees (*al-nahlah*), woodpeckers (*hud-hud*), etc.;
g) creatures that are considered repulsive such as lice, flies, etc.;
h) farmed Halal animals which are intentionally and continually fed with *najs*; and
i) other animals forbidden to be eaten in accordance to Shariah law such as donkeys and mules.

2. Aquatic animals

Aquatic animals are those which live in water and cannot survive outside it, such as fish. All aquatic animals are Halal except those that are poisonous, intoxicating or hazardous to health. Animals that live both on land and water such as crocodiles, turtles and frogs are not Halal.

Aquatic animals which live in *najs* or intentionally and/or continually fed with *najs* are not Halal.

3. Plants

All types of plants and plant products and their derivatives are Halal except those that are poisonous, intoxicating or hazardous to health.

4. Mushroom and micro-organisms

All types of mushroom and micro-organisms (i.e. bacteria, algae and fungi) and their derivatives are Halal except those that are poisonous, intoxicating or hazardous to health.

5. Natural minerals and chemicals

All natural minerals and chemicals are Halal except those that are poisonous, intoxicating or hazardous to health.

6. Drinks

All kinds of water and beverages are Halal as drinks those that are poisonous, intoxicating or hazardous to health.

7. Genetically modified food (GMF)

Food and drinks containing products and/or by-products of genetically modified organisms (GMOs) or ingredients made by the use of genetic material of animals that are non-Halal by Shariah law are not Halal.

Notwithstanding 2. and 3. the products from hazardous aquatic animals or plants are Halal when the toxin or poison has been eliminated during processing, as permitted by Shariah law.

Najs

Najs according to Shariah law are:

a) dogs and pigs and their descendents;
b) halal food that is contaminated with things that are non-halal;
c) halal food that comes into direct contact with things that are non-halal;
d) any liquid and objects discharged from the orifices of human beings or animals such as urine, blood, vomit, pus, placenta and excrement, sperm and ova of pigs and dogs except sperm and ova of other animals. (Milk, sperm and ova of human and animals except dog and pig, are not *najs*.)
e) carrion or halal animals that are not slaughtered according to Shariah law; and
f) *khamar* (such as alcoholic beverages and intoxicant) and food or drink which contain or mixed with khamar.

There are 3 types of *najs*:

a) *Mughallazah,* which is considered as severe *najs*, which are dogs and pigs including any liquid and objects discharged from their orifices, descendants and derivatives;
b) *Mukhaffafah,* which is considered as light *najs*. The only *najs* in this category is urine from a baby boy at the age of two years and below who has not consumed any other food except his mother's milk; and
c) *Mutawassitah,* which is considered as medium *najs*, which does not fall under sever or light *najs* such as vomit, pus, blood, *khamar*, carrion, liquid and objects discharged from the orifices etc.

APPENDIX 1 – PROGRAMME

BREAKOUT SESSION	
02:00 pm - 05:00 pm	**PARALLEL SESSION:** **(Room 306)** **GENETICALLY MODIFIED (GM) CROPS & HALAL**
02.00 pm - 02.10 pm	**Welcome Remarks** **Dr. Anwar Nasim** **Organization of the Islamic Conference Standing Committee on Science and Technology (COMSTECH)** **Pakistan**
02:10 pm - 02:30 pm	**The Rise of GMO Crops And Their Impact** **Dr. John Bennett** **Honorary Senior Research Fellow,** **Institute of Biochemistry, Molecular Biology and Biotechnology, University of Colombo** **Sri Lanka**
02:30 pm - 02:45 pm	**Global Status of Biotech Crops: Benefits to Developing Countries** **Dr. Behzad Ghareyazie** **Member, Higher Council of Biotechnology** **Head, New Technologies Division, Center for Strategic Research, Iran**
02:45 pm - 03:00 pm	**Islam & GMO** **Dr. Hani Al-Mazeedi** **Associate Research Scientist** **Kuwait Institute for Scientific Research, Kuwait**
03:00 pm - 04:00 pm	**PANEL DISCUSSION:** **Dr. Anwar Nasim** **Organization of the Islamic Conference Standing Committee on Science and Technology (COMSTECH)** **Pakistan** **Dr. Mohammad F.M.S. Al Motairan** **Kuwait University** **Kuwait** **Mrs. Hakimah Mohd Yusoff** **Deputy Director/ Halal Hub** **JAKIM, Malaysia** **Mrs. Mariam Abdul Latif** **Vice President - Halal Integrity** **Halal Industry Development Corporation** **Malaysia**
04:15 pm - 05:00 pm	**Statement on the Islamic Stance on GM Foods**
FORUM & WORKSHOPS END	

APPENDIX 2 – LIST OF PARTICIPANTS

The WHF Secretariat were unable to capture the names of all the participants in this workshop, roughly 30 participant details were not recorded.

#	Title	Name	Company Name	Email
1	Mr.	Mohd. Amran Husain	Central Spectrum (M) Sdn Bhd	amran@pulauindah.com
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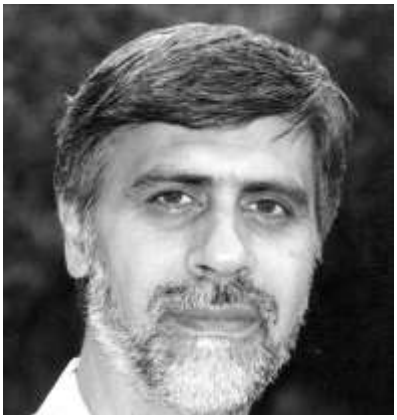
APPENDIX 3 – SELECTED PHOTOGRAPHS

APPENDIX 4 – SPEAKER & PANELLISTS PROFILE

Dr. Anwar Nasim
Organisation of the Islamic Conference Standing Committee on Science and Technology (COMSTECH), Pakistan

Achievements

- Advisor Science, COMSTECH, 1996 to the present day.
- Elected Fellow of Pakistan Academy of Sciences, 2007.
- Elected Fellow of Islamic Academy of Sciences, 1998.
- Pride of Performance, Civil Award in Molecular Genetics 1995.
- Overseas Pakistani's Institute (OPI) award for outstanding services for promotion of science in Pakistan, 1995.
- Sitara-e-Imtiaz, Civil Award in Molecular Genetics 1999.
- Elected Fellow of Third World Academy of Sciences, 1987.
- Scientific Research in Canada from 1966 to 1989, Atomic Energy of Canada Ltd. Chalk River, Ontario and National Research Council of Canada, Ottawa, Canada.
- Submitted more than one hundred scientific papers published in prestigious international World Journals. Edited eight books on Molecular Biology and Biotechnology.
- Ph. D. (Biochemical Genetics) Univ. of Edinburgh, U.K.
- Principal Scientist and Head, Molecular Genetics Group, Biology and Medical Research Department, King Faisal Specialist Hospital and Research Centre, Riyadh, Saudi Arabia.
- Founding President of Federation of Asian Biotech Associations (FABA).
- Member Board of Governors, Foundation University, Rawalpindi.



Dr. Behzad Ghareyazie

Strategic Research Centre, Iran

Dr. Ghareyazie (PhD Genetics) is the producer of the world's first commercialised insect resistant transgenic rice in collaboration with the International Rice Research Institute (IRRI). In addition to academic achievements and positions such as Dean, College of Agriculture of a state University in Iran (Guilan University), he held several executive positions. He was Deputy Minister and Head of Agricultural Research Education and Extension Organization (AREEO) of Iran. He is considered as founder of the Modern Agricultural Biotechnology in Iran since he established a worldclass Agricultural Biotechnology Research Institute of Iran (ABRII) in 1999 and served as its Director General for seven years. He is currently serving as Head, New Technologies Division of Iran's Center for Strategic Research (CSR), President of Biosafety Society of Iran and a member of Public Research and Regulation Initiative (PRRI) steering committee. He has been involved in several international negotiations on Modern Biotechnology and Biosafety regulations such as Cartagena Protocols on Biosafety and Codex Alimentarius. He is frequently invited by Food and Agricultural Organization (FAO), World Health Organization (WHO) and other international/ national authorities for consultation on safety assessment of foods derived from Modern Biotechnology and deliberate release of Living Modified Organisms (LMOs) into the environment. He has supervised more than 30 graduate students in the field of Agricultural Biotechnology and has published/presented more than 200 scientific papers in peer-reviewed scientific journals or in different congresses.

Dr. Hani Mansour Al-Mazeedi

Kuwait Institute for Scientific Research

Dr. Hani Mansour Al-Mazeedi is an Associate Research Scientist at the Kuwait Institute for Scientific Research. He was one of the pioneers (since 1979) who started promoting Halal in a holistic manner integrating HACCP and Halal, and taking the concept across the whole supply chain. His work has taken him to food industries and slaughterhouses in the world to closely watch the Halal slaughtering services and food processing techniques in countries such as Australia, New Zealand, USA, France, Brazil, Italy, Saudi Arabia and Syria, in addition to Kuwait. He has published several books in Arabic, the first of which was in 1998 titled 'Concepts on Food Hygiene'. Other book titles he has published include 'Practical Guide to Food Safety', 'My Food', and a two-part series titled 'Index of Official papers related to Food and Slaughter according to Islamic Rites, for the period of 1979-2009'. Dr. Al-Mazeedi was part of an official visit to McDonald's at the Hamburger University in Chicago, Illinois, USA, where he introduced the McHalal System for McDonald's international. He was awarded The Halal Journal Award for 'Outstanding Personal Achievement in the Halal industry' in 2009, is a regular contributing writer for The Halal Journal magazine, and is presently organising Kuwait's first Workshop which will be held later this year in Kuwait, in September 2010.

Mariam Abdul Latif

Halal Industry Development Corporation, Malaysia

Mariam Abdul Latif has studied in Malaysia, London and Indonesia to obtain degrees specialising in Agriculture, Nutrition and Halal food management. She began her career in 1979 as a lecturer in agriculture and food processing at the Institute of Agriculture Air Hitam, Johore and later at the Institute of Agriculture Serdang, Selangor (1990-1993). She joined the Ministry of Health Malaysia (MOH) in 1994 as a Food Technologist and established the office of Codex Contact Point Malaysia in 1996 under the Food Quality Control Division of MOH. Being the country Liaison Officer, she had participated in many Codex meetings defending many issues related to food standards, including the adoption of the General Guidelines for Use of the Term 'Halal' in 1997. She was a Consultant to the Codex Secretariat at the Food and Agriculture Organisation (FAO) of the United Nations in Rome, Italy in 2001 and 2005. She headed the Halal certification programme under the Department of Islamic Development Malaysia (JAKIM) from 2004 to 2006, and currently serves as the Vice President of Halal Integrity at the Halal Industry Development Corporation (HDC). She has presented more than 100 papers on Halal and Halal industry in Malaysia as well overseas including China, Australia, France, Netherlands, South Africa and Iran. She is a Fellow Researcher at the Halal Product Research Institute (HPRI), Universiti Putra Malaysia and a Panel Expert at the Institute of Halal Research and Management (IHRAM), Universiti Sains Islam Malaysia.

Darhim Dali Hashim

International Halal Integrity Alliance, Malaysia

Darhim Dali Hashim is the Chief Executive Officer of International Halal Integrity Alliance Ltd (IHI Alliance), an international non-governmental organisation created to uphold the integrity of the Halal market concept in global trade through recognition, collaboration, and membership. Darhim brings to IHI Alliance a wealth of corporate and Halal industry experience. Previously, he worked in various senior management positions including leading a diversification strategy for a conglomerate into the agricultural sector. This led to an opportunity to head up an integrated livestock and Halal meat operations where he gained real hands-on experience from the cattle yards to the slaughter floor. He was invited to share his knowledge and experience on Halal Journal TV, Pakistan's ATV and Business Plus channels and was also interviewed by Time and Forbes magazines. Darhim introduced Halal for the first time at the CIES International Food Safety Conference held in Barcelona, Spain, and was a speaker at World Bank's first East Asia Pacific (EAP) Regional Agribusiness Trade & Investment Conference in Singapore. In the early part of his career, he was an audit manager at PricewaterhouseCoopers after having completed his Chartered Accountancy qualification with Kingston Smith in London. He graduated with a Bachelor of Science (Honours) degree in Economics from the University of Bristol in England.

ANOTHER REPORT

BY WORLD HALAL FORUM SECRETARIAT

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