



Halal or Haram-New Challenges for Religious Scholars Muslim World and Food Supply Chain Stake Holders

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Abstract

The three religions e.g. Islam Christianity and Judaism have the same origin, hence their guidelines for practices in daily routine have striking similarities. They comprise the major population of the globe who are believers of existence of God, hence abide their diet ingredients intake as per their religion. According to Islamic Ideology, halal states for the food which is permissible to eat whereas Jews called it kosher, a more stick form of categorizing the permissible food commodities. Muslims eat many kosher food items. This paper is written to highlight the different challenges being faced by different stakeholders comprising the food supply chains which differ among different populations based on different factors including individual's eating habits, culture and faith.

Keywords: Food Supply Chain, Biotechnology, Halal, Haram. Kosher, Big Data. Regulatory Authorities, Food Safety, GMO, Epigenetics, Apoptosis, Mutation, Evolution

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Halal or Haram Food Commodities-Safe Food

Consumption of beef and mutton is halal only if the animal is slaughtered while adopting the method of kosher e.g. the vein in the neck of the animal is cut with a sharp knife and allow the blood to come out till the animal dies. The hidden scientific logic is, since the blood is high in nutrition it supports the growth of micro-organisms both diseases causing ones and spoilage organisms besides initiating many harmful biochemical reactions if blood is left in the body of dead animals. Recent scientific findings prove that blood of cattle fed on feed derived from animal components can carry a factor/ ingredient called prion, which can cause fatal diseases in human beings. Unfortunately many developing countries following legislation based on Islamic Ideology believe in following Islam without revealing the underlying logic on most of the issues including food as well. For instance adding animal blood portion/waste even without needed processing in animal feed as reported by different circulations is in practice in different countries whereas this practice increases the risk of spreading disease and causing spoilage by micro-organisms in addition of adding risk of occurrence of fatal diseases in human beings but we consider this practice halal. Bovine Spongiform Encephalopathy (BSE) which is also known as mad cow disease can be transmitted to man if the waste from animals specially those having vertebrate is used in animal feed to improve protein content in their products e.g. meat, milk eggs and to increase growth of animals. It is for the same reason that use of animal waste in feed consumed by all types of animals are generally banned in developed countries. Similarly the medicines and hormones which are stated prohibited and haram by science and research scholars are freely used in animals to increase the meat

mass and milk production which through animal derived food items reach to human bodies and cause adverse effects including physiological and psychological disorders but concerned regulatory authorities are silent so are science and religious scholars [1,2,3,4,5,6]. Wine is haram according to Islamic Ideology because of presence of alcohol which brings the consumer in mental state where they loss control on self but when the same wine becomes sour due to enzymatic reaction with oxygen by the activity of micro-organisms or due to mixing of air which changes alcohol into acetic acid, to transform wine into vinegar and it becomes halal as it loses its property to make an individual loss self control on consumption. There are many preservatives from animal sources which are obtained from haram animals addition of such ingredients in food items particularly commercially prepared food items make them haram for consumption. Many Muslims gave up eating fermented cheese merely because the stomach extract used in preparation of cheese by natural process is usually collected from cattle which are slaughtered in the way not following the standard procedure permissible in Islam. For this reason, different industries on losing massive customers started using micro-organisms or papain/ pineapples extract to mediate the said process during naturally prepared cheese. Interestingly those individuals who raise question to certify a product as halal or haram and safe as well are among those who have been living in developed countries abiding non Islamic legislation whereas Muslim world seems to eat everything whether safe or non safe like sugar but cited as halal in Islamic Scripture [7]. To improve the nutrient content, organoleptic properties, and shelf life the farmers by cross-transferring the pollen grains (plant reproducing units) between different varieties of plants over the period of time successfully developed new varieties which is a natural process but it takes longer time to happen at its own in nature e.g. often more than a century is required to evolve new varieties which can be different from the varieties developed by man [1,2]. For instance kinnow is crossover of two different produce varieties (cultivars) of citrus fruits. Similarly mule is off spring of male donkey and female horse. Consumption of mule meat is haram same as like donkey meat. To give fruits and vegetables longer shelf life and to keep them fresh plants are watered with having harmful chemicals, chemicals are rubbed on their peels, sprayed on them or are injected in them. A simple way to screen the produces which do not spoil on keeping in fridge but contain harmful chemical ingredients is to wrap them in kitchen paper and keep them in fridge for one day. In case on taking out a fruit or vegetable which seemed to be of good quality with having same colour, firmness all over and has good taste as earlier, it indicates that it is safe to consume this produce but, if certain portions of the produce changes its colour, becomes soft whereas the rest all is firm and stiff with or without having deteriorated taste, do not consume such produce and inform the concerned authorities. Produces which spoil on keeping in fridge are recommended to be kept wrapped in kitchen towel paper at some dry but cool place. In case if over a period of time less than two days, the same deteriorating characteristics are developed then send the said produce samples to concerned authorities for safety evaluation [4,5,6].

Biotechnological Knowledge and Limitation in its Progression

With the emerge of biotechnological applications, there are three types of biotechnologically derived products available in market. They include the products which we eat them as food medicines consume them as vaccines or have them injected in body. Others are the products which we use as different items but do not eat them such as clothes, shampoo, cosmetics and third are entities which somehow come in our environment and we are not aware of them,

but their interaction with us or living entities around us can raise health thread or can induce the initiation of different illness including allergies, cancer etc [2]. The living cell, also the building unit of plants and animals, contains a fragment or fragments build up of a unit block called Deoxyribonucleic Acid (DNA). Each block is attached with one of four varieties of chemical unit called nitrogen bases whereas certain portions of DNA comprising a particular sequences of these nitrogen bases (genes) carry information about the characteristics which the living cell can have whereas cell functions to present these characteristics within the cell are governed by chains of amino acid (Polypeptide/Protein) chemical entities with having variable structural complexity which are only produced within living cells to regulate their functions as well as comprise the building units of these cells too. Not only human beings, animals, plants but these micro-organisms including virus (though controversial) are living entities whereas plant animals and human being are made of huge number of cells working together in co-ordination [1]. Biotechnology refers to different techniques through which DNA/Proteins or their manufacturing units within the cells are transferred from one type of cells to other cells to attain different characteristics governed by transferred DNA/Proteins e.g long shelf life improved organoleptic properties, protection from pest and plant diseases which in plants can be transferred from halal animal, haram animal or micro-organisms or blend of all to recipients cells. Same stays true for animals as well as for achieving objectives like producing more flesh, better milking, improved strength. Such animal or plants are called Genetically Modified Crop (GM) Crops or for Animal it is referred as Genetically Engineered Animals. Same process is done with micro-organisms to improve the yield of antibiotic, other medicines, food products vaccines and other products having microbial origin. The use of biotechnology is a mean to enjoy blessings of nature at full bloom provided the safety measures are met while producing applying or using or having a trial of biotechnologically derived product or item in field or on human beings animals and plants (1,2,3,5,6,7,8,9,). With the advancement of understanding in the area of molecular biology, the whole concept in this area has changed. Previously, the deletion of gene used to be associated with loss of an activity/characteristic whereas in certain cases the findings show that some functions of the cells/body are altered e.g. heightened on having deleted a gene, the findings become more significant when some organisms within a given population having deleted the essential gene exhibited improved survival in the stress condition under which majority of population failed to sustain the viability [1,8,10,11,12]. This was an alarming finding for most of the scientists having the dream to control life and living through technology [2,3,6] which seems to be shattered. Since the process of research leading to generation of knowledge its dispersion has serious flaws which has created gaps in understanding makes it deficient to comprehend the overall concept in almost every domain of knowledge, the consequences are non reproducibility of data which on one hand misleads the future course of investigation in research whereas on other hand overshadows the real challenges of future mainly because of prevailing conflicts of interest and power and authority driven politics to sustain with the high pace of generation of data on previously accepted concepts, hence avoiding to recognize the newly emerging concepts based on alternative narratives, but experientially proven biological phenomena which can challenge the authenticity of past understanding in the given area, such novel findings e.g. the genome also operates through supra locus regulation mechanisms comprising the genes networks could not yet be reported in globally most respected scientific journals very likely because of serving personal professionally and commercial interest of a few individuals running

the show in different professional circles as well as to avoid shift in course of research in the main and the related domains, which can spare huge number of researchers, technicians, equipments etc. We are in a state where we think we know but in reality we do not know what we know is NOT THE SAME as it exists. It is extremely alarming situation that we are dreaming to resolve our problem with having knowledge of no credibility mainly because we are reluctant to grasp any revolutionary approach in the understanding of molecular biology on which relies the whole domain of biotechnology. Science is to serve mankind but our greed has made mankind to be used for science to serve the professional purpose of few individuals, mainly those controlling the whole process of research, publication and grant approvals etc [13,14,15]. By using biotechnological techniques, researchers cannot control the variations within the ongoing events taking place within the cells comprising the population/s independent of recombination pathways[16] recently proven dependently as well and this is one of the main limitation of all biotechnologically based activities hence can endorse within biotechnology does not lie the solution of every problem and at the same time it also indicates that biotechnologically supported activity can not necessarily produce the same results in different environments [1,2,8,10,11,12,18,19,20,21]. In addition to ongoing discussion, our unpublished work indicates that the process of apoptosis seems to be regulated at molecular level through oxidant gradient flux sensing the environment operating through genes network whereas certain elements acts as modulators [1,8,12,22,23,24,25,26,27,28,29,30,31,32] which in other words mean we are very close to reveal cure for most of non-infectious illnesses e.g. neural disintegrative diseases Alzheimer, cancer, allergies particularly in situ which means organ repairing would become part of daily life which would spare us from undergoing through the tedious process of transplantation and risks associated with this discipline of science [33]. The idea to address the consequences of global warming through intervention of biotechnology itself indicates the likelihood of limited understanding in the given and related domains of science[6,15]. More viable options to meet the challenge of global warming would be discussed in our upcoming papers.

Consequences of Use of heavily invested High Technology based sophisticated Equipments

Heavy investments have been made to use highly sophisticated facilities to study and reveal the ongoing events within the cell without realizing the fact that every device has associated with it an error factor whereas the findings are for a given set of conditions at a stance for a biological system which can never accommodate with it naturally occurring parallel events, co-originated and governed at different levels to opt between apoptosis, evolution or mutation otherwise mutually leading to some other phase of life physiology as is also evident hence high technologically driven work in this area has been so far proven to mislead [8,11,34,35]. In simple words, highly sophisticated facilities generally assay a particular factor or group of factors as dependable variable/s against independent variables and explore their co relation under different imaginary scenarios using statistical tools on big data collected usually gathered by using sophisticated instruments on test samples obtained from different large populations. Since a single or group of factors assayed are not necessarily be conclusive representative of any biological event or indicative of life itself/themselves, high technology based heavy instruments driven data carries huge error and usually studies based on such data end up in drawing misleading conclusions. Secondly the prevailing conditions and past history of populations under study for generating big data are usually not comparable, for this reason use of isogenic population/s has evolved for such studies but it does not

make studies error-free [36]

Conclusion

Most of the countries including Pakistan does not need to use biotechnological tailored genetic engineered products particularly re-combinant products either imported or developed locally as consumable food items including agricultural products as non conventional practices can produce ample quantity of crops/ animals based food if the latest knowledge on agriculture science and technology is applied with having world class understanding in this area. Another important technical reason is a biotechnological product which is successful in one type of environment does not necessarily produce the same results elsewhere[6,15]. Beside this, biotechnological manipulation involves risk of evolving biological bug with having unknown potentials, which can turn out as global threat for global community's well being. The fourth and the most important concern for believers including Muslims is to know which biotechnological products are halal and it depends on the donor and recipient sources of DNA/ Protein which respective religious scholars with public consultation are best to decide[2]. It is only possible when the manufacturing and marketing organizations mention the required information on the labels of products. Those items which do not carry any biotechnologically processed ingredients and they are produced naturally without the use of synthetic fertilizers are known as organic products but are usually more expensive. What matters more health or wealth? can be an individual's decision but global safety and well being of existing and forthcoming generations of all creatures are all our joint responsibility. Wake up before all are dead mad or end up in miseries [37].

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