

## **Potential Hazards in Food; Ensuring the Concept of Tayyab in Food**

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### **Abstract:**

Halal means permitted and Tayyiban means wholesome, good, healthy, safe, clean and nutritious. The concept of wholesome means morally good: promoting the health and well-being of the mind or spirit and of the body. Food safety hazards are found throughout the food supply chain and can be described as: 'biological, physical, chemical and allergenic agents in food that are reasonably likely to cause illness or injury in the absence of their control. Biological hazards caused by bacteria, viruses or parasites those are present in air, food, water, soil, animals and humans. Physical hazards foreign bodies in food are usually due to accidental contamination and / or poor handling practices. Physical hazards are most recognized by consumers as they usually find this food safety hazard. Chemical hazards can include: cleaning chemical residues: chemicals used for cleaning and sanitizing food contact surfaces; factory contaminants: pest control chemicals, lubricants, coatings, paints, refrigerants and water treatment chemicals. Food allergens includes: eggs, fish, milk, peanuts, sesame seeds, soy, sulphites, tree nuts and wheat. Naturally occurring harmful chemicals are: Mycotoxins, mushroom toxins and shellfish toxins. With globalization, internet, trade and other advancements our food supply is now global. That means anyone from anywhere can order any food at any time to be consumed anywhere in the world. That creates a challenge to produce wholesome and clean foods all over the world. In the developed world companies will use their own food safety laws, rules and regulation to product clean Tayyab food. These companies take a proactive approach to food safety. The Halal food industry needs to consider some additional hazards to make Tayyab, i.e., wholesome and clean. These can be identified as religious food hazards. One of the most serious hazards is cross-contamination with non-Halal food ingredients. Second serious religious hazard is stunning of an animal before or immediately after slaughter. Third most serious religious hazard is the toxic environment that exists among Halal certifying bodies. Thus, the Muslim community needs to address all of these issues to assure that it has a food supply that is not only Halal but also Tayyab.

**Introduction:**

Halal means permitted and Tayyiban means wholesome, good, healthy, safe, clean and nutritious. The concept of wholesome means morally good: promoting the health and well-being of the mind or spirit and of the body. Islam teaches cleanliness in every part of life, including during food preparation and processing. According to one Hadith, cleanness is half of the Muslim faith. In fact, today's Halal consumers are more concerned about Halal food quality and safety than ever before. Although the Muslim food supervision organizations have always monitored compliance with the Halal food system, adulteration, contamination and other hazards continue to be detected with laboratory tests. In general, there are four types of hazards in the Halal food manufacturing process: physical, chemical, biological and allergenic.

**Physical Hazard:**

A physical hazard is any extraneous object or foreign matter in Halal foods that may cause illness or injury to the consumer. These foreign objects may include, but are not limited to, bone or bone chips, metal flakes or fragments, injection needles, pieces of product packaging, stones, glass or wood fragments, insects or other filth, personal items, or any other foreign material not normally found in Halal food. Such contaminants may come into the plant with raw materials, may fall into foods from badly maintained facilities and equipment, or may reflect poor employee practices.

**Microbiological Hazard:**

Microbiological hazard occurs when food becomes contaminated with microorganisms found in the air, food, water, soil, animals and the human body. Many microorganisms are helpful and necessary for life itself. However, given the right conditions, some microorganisms may cause a foodborne illness. Microorganisms commonly associated with foodborne illnesses include bacteria, viruses and parasites.

**Chemical Hazards:**

Chemical hazards can occur at any point during harvesting, storage, preparation and service. When toxic chemicals are used for pest control or for cleaning and sanitizing food contact surfaces and these surfaces come into contact with food, the food may be contaminated by those chemicals. Toxic metals used in production equipment such as copper, brass, cadmium, lead and zinc can be a source of chemical contamination. Zinc is used in galvanized containers (e.g., garbage cans). Gray enamelware containers may be plated with antimony or cadmium which can make acidic foods such as orange juice, tomato sauce or pickles poisonous. Pottery dishes with lead glazes should not be used to prepare or serve food.

**Food Allergens Hazards:**

Food allergens hazards can be a significant health risk to those consumers who have allergic reactions to specific foodstuffs. Allergens from other normally safe foods can contaminate other food products during the preparation, storage, or distribution stages.

**Control of Hazards:**

All of these hazards may be monitored and controlled by applying different food standards and guidelines such as Good Manufacturing Practices (GMP), Hazard Analysis Critical Control Points (HACCP), British Retail Consortium (BRC), Global Food Safety Initiative (GFSI), International Standards Organization, (ISO) and Codex Alimentarius International Food Standards. For example Codex currently has 49 different guidelines for different food products each including hygienic practices. Most of the developed countries and international food companies follow very strict rules for producing clean and wholesome foods (Tayyab foods). For example, Cargill, DuPont and Nestle have their own guidelines for wholesome and clean foods. They are committed to never violating any rule that jeopardizes the safety or cleanliness of food, whereas it may be a major issue for food companies in developing countries to produce Tayyab foods. Sometimes food companies in developing countries do not have enough resources to follow Tayyab rules for foods. Regulatory agencies may not strictly enforce the guidelines for producing clean and wholesome foods. Some companies may not understand the importance

of cleanliness during the production of Halal foods. These companies need to learn more about the hazards in food beyond the issue of contamination of Halal foods with non-Halal ingredients. According to a 2003 FAO report, 70% of deaths among children under 5 years were linked to contaminated foods in less developed countries.

### **Globalization:**

With globalization, internet, trade and other advancements our food supply is now global. That means anyone from anywhere can order any food at any time to be consumed anywhere in the world. That creates a challenge to produce wholesome and clean foods all over the world. In the developed world companies will use their own food safety laws, rules and regulation to product clean Tayyab food. These companies take a proactive approach to food safety.

### **Religious Hazards:**

The Halal food industry needs to consider some additional hazards to make Tayyab, i.e., wholesome and clean. These can be identified as religious food hazards. In a complex and globalized world it has become increasingly difficult to trace the lines that link raw materials with producers, products and consumers. One of the most serious hazards is cross-contamination with non-Halal food ingredients. During processing of Halal and Tayyab food, the focus should always be on avoiding non-Halal ingredients. This contamination can occur through hidden ingredients like lubricants, releasing agents, antifoaming agents, filtering agents, clarifying agents and bleaching compounds; all being examples of processing aids that are not disclosed on the consumer label. Many of these ingredients may contain non-halal ingredients often from pork and its byproducts. According to Christien Meindertsma there are approximately 185 different products and ingredients that are made from pork and its byproducts such as the blood, bones and hides. One of the ingredients is the enzyme which is extracted from pork stomachs (Pig 05049). This one enzyme can be used in making and processing hundreds more food products. According to Sustainable Swine Resources, no other animal provides society with a wider range of product than the pig. It provides a vast array of high quality pig co-products that is utilized as sustainable resources within many human and animal industries.

These industries include, but are not limited to medical, human health, industrial and consumer, companion animal and animal health. Products from the pig such as the pancreas, spleen, thyroid, trachea and kidney are further processed into supplements for both human and animal consumption. There are over 40 pharmaceuticals and medicines are derived from pig co-products (Sustainable Swine Resources). Food becomes religiously unacceptable when contaminated with pork or its ingredients. Contamination of a Halal product can occur by directly touching pork meat to the product, by not washing hands and then touching a Halal meat product, by using the same surfaces, such as cutting boards or cleaning cloths that have not been cleaned after non-Halal food handling, and by non-Halal foods drippings on or touching Halal foods.

Another serious religious hazard is stunning of an animal before or immediately after slaughter. Some of the animal activist groups think that religious slaughter is a health hazard whereas Muslim consumers believe that the various secular stunning procedures causes more hazards for consumer. For example, during penetrating stunning, the most common way for cattle to be slaughtered, the animal's brain get shattered and if the animal has any brain diseases such as Mad Cow Disease the virus will get into the blood and will contaminate the meat of the animal, causing a serious hazard. Another serious religious hazard is the toxic environment that exists among Halal certifying bodies (HCB). Most of the Halal certifying bodies do not accept another HCB's Halal certificates. And some of the HCB's are issuing bogus Halal certificates without any inspection of the facility.

**Summary:**

Most of the food safety hazard can be controlled by using different food safety systems. To produce Halal and Tayyab food we need to work in developing countries to enforce these food safety regulations. To make sure food is Halal and Tayyab Muslims need to follow religious hazards as well. In short Muslim community needs to address all of these issues to assure that it has a food supply that is not only Halal but also Tayyab.

**References:**

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