

Food Adulteration and its Effect on Health

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Food adulteration is a growing problem in Bangladesh as large numbers of consumers have become victims of consuming adulterated foods. The chief technical adviser of Food and Agriculture Organization (FAO) in Bangladesh Dhaka in a seminar on 'Food Safety Challenges in Bangladesh' stated that an estimated 45 million people in Bangladesh suffer from food poisoning or some kind of food-borne diseases round the year¹. Adulteration of food with toxic chemicals harmful to health has reached an epidemic proportion in Bangladesh. The newspapers have out and out conferred it, as the 'silent killer'. It is now very difficult to find a sector of food industry which is free of adulteration. Experts believe that 76% of foods of our country is adulterated. Alarming increase of adulteration of food commodities create a strong public opinion for combating the ferocity of the offence².

The present system of prevention of food adulteration cannot curb the evil activities of various types of common adulteration and malpractices openly seen in Bangladesh because there exists no surveillance of programs for prevention of food adulteration. Occasionally the Magistrate vested with power and the food inspectors suddenly raid on food shops, food preparation yards, food workshops, manufacturing plants to catch red-handed the unscrupulous food traders with adulterated foods. Anybody found to do this malpractice is given moderate punishment by the mobile court. Adulteration of food articles has been marked as an offence under the Pure Food Ordinance, 1959. The definition of food adulteration according to this ordinance states that an article of food shall be deemed to be "adulterated", if any substance has been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength, or any substance has been substituted wholly or in part for it, or any of the normal constituents has been wholly or in part abstracted so as to render it injurious to health, or it is mixed, colored, powdered, coated or stained in a manner whereby damage or inferiority is concealed or it contains or is mixed or diluted with any substance in such quantity as is to the prejudice of the purchaser or consumer or it contains any poisonous or deleterious ingredient which may render it injurious to health, or it is not of the nature, substance or quality which it purports to be or which it is represented to be by the manufacturer or the seller³.

From raw vegetable and fruits to milk and milk products to fish, meat and processed foods – every food item is contaminated. Almost every day in the newspapers, newer and newer methods of adulterating newer and newer types of foods are reported. Calcium carbide, formalin, textile colors, artificial sweeteners, DDT, urea etc. are used rampantly. A common practice among food vendors is to spray fish, fruits and vegetables with chemical preservatives including formalin - a commercial solution of formaldehyde and water - to boost food's life span and appearance. Print and electronic media, different organizations and the public have drawn the attention of the government to this dreadful threat and demanded formulation of appropriate law and supervisory body to address the issue.

Formaldehyde and poisonous DDT (*Dichloro Diphenyl Trichloroethane*) powder unrestrainedly used in the dry fish have been evidenced as a human carcinogen. Consumption of foods prepared with added textile dyes can lead to hazards in life. Calcium carbide treatment of food is extremely hazardous because it contains traces of arsenic and phosphorous. Once dissolved in water, the carbide produces acetylene gas. Acetylene gas may affect the neurological system by inducing prolonged hypoxia. The findings are headache, dizziness, mood disturbances, sleepiness, mental confusion, memory loss, cerebral edema and seizures. Carbide may also cause renal and liver problems especially in children⁴. Use of melamine in Infant formula in China and else where created a panic and many children died of consumption of those formula milk. Melamine causes urolithiasis and renal failure. Common symptoms are acute anuria, oliguria and dysurias etc⁵. Prolonged consumption of food having formalin may cause renal, liver problem and may often induce carcinoma.

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Low cost ice creams are liked by school children as they are sweet and colorful, but these are prepared using by unclean water and the dyes which are used are industrial dye supposed to be used for dyeing clothes. These dyes are hepatotoxic, nephrotoxic and carcinogenic. Coronary artery disease (CAD) is an increasingly important medical and public health problem, and is the leading cause of mortality in Bangladesh, like in other South Asians, Bangladeshis are unduly prone to develop CAD. Researchers have observed that contaminated food and water especially arsenic contamination of food and water might play role in causing the disease⁶.

Pharmaceutical companies are fast developing in our country. In a study it has been demonstrated that many pharmaceutical companies dispose their waste water and waste product without prior treatment directly to the nearby surface water and agriculture field thus contaminating surface water and agricultural product and producing multi drug resistant microbes and causing a threat to the health of the surrounding population⁷. Herbal medicine and herbal products are very ancient in our country and suppose to be very safe but several studies indicated that because of intentional or unintentional contamination or adulteration of the product these become injurious to health. Herbal cosmetics thought to be very safe as are produced by natural ingredients but using these products are producing allergic reactions and complicated dermal diseases as they are contaminated by many unsafe chemicals⁸.

Taking food from street vendor is common in Bangladesh and in other developing and developed countries. These foods are not usually prepared hygienically. Recently mixture of sodium cyclamate with different articles of food, such as sugar, biscuits and eatables made of sugar has become a cause of common concern. Sodium cyclamate is a poisonous chemical substance which causes serious injury to human body particularly to the children. Intake of sodium cyclamate may result in the outcome of serious diseases like cancer and ulceration in different parts of human body¹⁰. Experts, including physicians, point to the likely hazards of the chemicals and artificial substances on human health. According to them, formalin applied to vegetables, fish, fruit, meat and milk may be a probable cause for throat cancer, blood cancer, childhood asthma and skin diseases. Coloring agents chrome, tartazine and erythrosine used in spices, sauces, juices, lentils, and oils may cause cancer, allergy and respiratory problems. Calcium carbide may lead to cancer in kidney,

liver, skin, prostate and lungs. The increasing recurrence of patients suffering from cancer, diabetes and kidney diseases through out the country may, in large part, be due to consumption of adulterated food. Poisonous residues in food items leave the worst impact on children's mental and physical growth and women's fertility.

Everyone has the right to get pure food but unfortunately because of greedy traders it has become almost impossible¹¹. Ironically, people from all walks of life is aware of the hazards of taking foods adulterated with toxic chemicals, but this knowledge is not translated into practice. In a recent study, it has been found that though people are aware about the health hazards, they are nevertheless buying and consuming these adulterated foods. The explanations for this paradox are (i) absence or unavailability of non-adulterated food, (ii) failure of the regulatory agency to test and screen out adulterated food, (iii) adulterated foods are attractive in appearance and costs less, (iv) cultural factors and food habits etc¹².

Adulteration of food articles has been marked as an offence under the Pure Food Ordinance, 1959 providing minor penalties of different kinds. Taking advantage of such minor penalties the unscrupulous traders have started masking the poor quality and begun activities of mixing injurious materials in almost every food articles like fruits, vegetables, fish, meat, flour etc. As a result an amendment of the Pure Food Ordinance, 1959 has become necessary to be replaced by the Bangladesh Pure Food (Amendment) Act, 2005, giving a widening definition of adulteration and the scope of the law and also enhancing the punishment of the offences. Since a host number of Ministries, Departments and Agencies are involved in food safety activities, the enforcement of the existing legislation becomes complicated to implement. The food hygienists, scientists, law makers and consumers strongly feel that Food adulteration and malpractices to produce health hazardous foods are not matters to be dealt only by the BSTI. The menace has to be addressed at the national level before it devastates the nation. In absence of a national food safety control system, two-thirds of the total food items hit the market without any quality check. BSTI is the sole body to look after the quality of the products in Bangladesh.

To wipe out the threat of widespread food adulteration and ensure safe foods in the country the government is now in the process of forming a single agency styled Bangladesh Food Safety

Authority (BFSa) and has drafted a Safe Food Law (2013). The government is giving emphasis on the enforcement of these laws and providing all necessary support to ensure maintaining the safety of foods. Recently the government is advocating the concerned marketing authority to use a special preservative detector machine to check food for formalin at the sourcing in order to make sure that the customers receive safe food.

Food Safety Governance is although an abstract idea in Bangladesh, but health and trade implications of governance gaps are significant. These gaps could be filled gradually using existing resources. The government and the public together need to maintain certain standards so that consumers are satisfied with what they consumed in terms of their quality, standard and hygiene. Our constitution also gives importance to food safety. For this to achieve, relentless enforcement of existing laws with the execution of highest penalty possible, awareness-building campaign among consumers, promotion of ethical practices among the business community with active involvement of the business leaders, and capacity development of public health laboratories to test food items for adulteration on the spot are needed.

The food safety laws in Bangladesh are conventional and do not meet the present needs. Among rules and ordinances the most interesting features of these laws are that aggrieved consumers cannot sue the violators themselves. It is only the designated government officials empowered under these laws, who can initiate and sue the violators. There is good news for us that government approves Consumer Rights Protection Ordinance 2007 which provides some effective punishment of different terms. The cabinet has approved tougher law against food adulteration with a hope that it will refrain the unscrupulous greedy traders from food adulteration. The authorities have made a provision for seven years' imprisonment or a fine of Tk10,00,000 (one million) or both for a first-time offence under the 'Pure (Safe) Food Bill 2013' being a reflection of people's wish. The punishment to be awarded in case of a second-time offence is double both in terms of the imprisonment duration (14 years) and the amount of fine to the tune of Tk 20,00,000 (two million). This just falls short of the death penalty awarded to the guilty of the most heinous crimes. Successful implementation of laws depends on how serious and respectful both the people and the authority are enforcement of the issue in question¹³.

To establish consumer rights effectively in Bangladesh the law makers, experts, and business promoters and persons from civil society could advocate in favor of the following steps:

- a. Establish a separate consumer courts to deal with cases of violation of consumers' rights
- b. Empower the consumer so that the aggrieved consumers can individually sue against the violators.
- c. Civil society and media people to come forward to create awareness about the rights of consumer.
- d. Leaders and distinguished persons of the society to participate in the campaign to increase the awareness of the consumer and alert the government.

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