

Project Report on

Food Adulteration & Health Hazards In

Bangladesh

Submitted To

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Subject: Submission of the Project Report

Dear Sir,

This is my pleasure to present my project report on “**Food Adulteration & Health Hazards in Bangladesh**”. This is the obligation and requirement to complete the united international university’s BBA program.

Although during working of this project, I have tried to follow each of the instructions that have given my honorable instructor. I believe that knowledge and experience I have gathered from this project will help my real life and also my professional life.

Sincerely,

Md Aminul Islam

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Acknowledgement

In the first instance I am enormously grateful to my honorable supervisor, **Dr. Khandoker Mahmudur Rahman**, (Associate Professor of United International University) for his thoughtful guidance and generosity. A successful project completion needs help from various sources, as I have taken information from different person and also have taken information from various online websites. Lastly I must say that, this project would not be possible to done without my supervisor's help and enthusiasm and also for the other person involved in this process.

Declaration

I hereby declare that the project work entitled “**Food Adulteration & Health Hazards In Bangladesh**” is an original work and never been presented before, which is done by me under the guidance of Dr. Khandoker Mahmudur Rahman, Associate professor of United International University. This project is submitted in the partial fulfillment and required for the degree of bachelor.

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Abstract

This project report is prerequisite to complete the bachelor program of United International University. In this report there is a clear scenario of food adulteration in Bangladesh, this is the problem of past and also present and it's growing very fast, for this problem people are suffering from food related illness and also being deadly disease. Adulteration of food is basically being adulterated by mixing or replacing lower substances and also eliminating some essential ingredients. In all over the world this adulteration is being occurred, in our country this dimension of adulteration is much more than the other country, almost every day we general people are taking or consuming this adulterated food and suffering for that. We have law but this is not applied properly for the many sorts of limitations. In this regard we must need strong law and embed that law properly.

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01. Introduction

Food adulteration means different sort of ingredients and substances mixing, concealing and substituting of food quality by various toxic substances instead of good quality ingredients. Food safety refers that handling food properly, storing and preparing food by stuff with the safety way, to prevent infection and help to make sure that food is keeping enough nutrition and also it's good for our health. In legal terms, adulteration means that the food is not meet with the legal standard. Basically we people earn money to fulfill our hunger, for that matter what we are actually eating is the major matter of issue, if we eat dangerous ingredients such as sawdust, industrial starch and other sort of contaminated food then we will fall in trouble by many type of disease. The food is the very essential source of disease; therefore we invite different disease instead of good health. If we cannot eat then we will be become weak, we must need food to live, that's why it must be free from adulteration. Though the food adulteration problem was before but now a day's gradually it been a major issue in Bangladesh, a large number of people are consuming it and falling in trouble. In 2013 study found that, estimated more than thirty million general people are suffering from kidney disease due to consume adulterated foods. Many print media has imputed this is a silent killer. In present time there have many different food safety law dealing with food adulteration issue but the level is increasing day by day, for that reason it is very much required to control this problem along with the applicability of law. Our only intention is to inform our current food adulteration scenario and to achieve positive change by the regulators to take necessary steps.

1.1 Objective of the study:

The main objectives of this report are as follows:

- To have a clear idea about the food adulteration and the whole process of this adulteration.
- To find out how they adulterated the food items by the different toxic and unhealthy ingredients.
- To understand for the common people that what would be the consequence after consumption.

1.2 Purpose statement:

The purpose of this project report on the topic of “**Food Adulteration and Health Hazards in Bangladesh**” is to know the importance of food, to know the harmful effects of food adulteration and the process of how the food adulteration can be prevented.

1.3 Literature Review:

One of the main objectives of this report is to find out the effect of food adulteration and the people's health risk and knowing the connection and relationship of the business strategies. In this whole report I shared the theoretical knowledge which I collected from different sources of secondary data from the online basis which is related to this food adulteration.

1.4 Aim of the Report:

- To know the different types of food adulteration.
- To understand the current picture of the food adulteration.
- To know the different categories of adulteration.
- How foods are basically being adulterated.
- To evaluate the general fact regarding food adulteration and the disease caused by food adulteration.
- To know the other facts of the adulteration and the social health.
- How food is being adulterated during packaging.
- Why businessmen do this.
- To know how to control this cause.

1.5 Significance of the study:

The importance of any research considered for the research type and the background of the study, this research project task will remain incomplete until the report is presented. There also a value of well designed and conducted research study in a formal way, most important generalizations and discoveries have little value to the readers unless they are presented with successfully. The purpose of this research would be successful when this project would be presented or disclosed in a formal to way. This study of the research will serve all aspect of food adulteration and the readers would be able to understand the whole process of food adulteration. The readers would be able to include various types of adulteration, categories of food adulteration, as a food in general.

1.6 Methodology:

Research methodology refers that the discussion on the specific form of the study which have chosen and used to address the selected research topic which is “**Food Adulteration and Health Hazard in Bangladesh**”. The secondary data were collected for this project report, and also this is a descriptive research which includes relevant provisions and different sort of food adulteration by different field. The methodology focuses on the characterization and definition of the study. This also explains the techniques chosen and provides a complete procedure and it used to select, collect and analyze the data.

1.6.1 Research Type:

This a descriptive research study, and I am doing this report onto the area of “Food Adulteration”. All the necessary data and information have in this research and the required information are described.

1.7 Scope of this Report:

The following features have covered in this report:

- The entire and broad concept regarding food adulteration.
- Different types of food adulteration and its characteristics.
- How foods are basically adulterated.
- Side effect and effects of food adulteration in society.
- How to control food adulteration.

1.8 Limitations:

There have a lot of limitations but some are mentions below:

- Scarcity of data required for the study.
- There is time limitation of conduct the study.
- Moderate number of information in the website.

02. Different Types of Adulteration

Adulterated foods are very dangerous for the human body. This could be many reasons to deadly disease and even death. This is a kind of crime, so this is highly dangerous problem in our country, as a nation we are mass populated. A huge number of businesses are doing this illegal think or adulteration to their product or item, so this is high time to prevent this cause into our country otherwise if this continue then we give a huge number of cost for this. As our government takes some measure to tackle or remove this problem from our country but this is very small initiative to remove this problem. If we want to remove this cause then we all have to work together to save our country and our people. Public awareness is one of the major issues for this cause, and should be careful about the adulterer food items. There are several types of food adulterants and food products, those are as follows:

Intentional adulteration: Intentional adulteration means where the person or the group of people who are connect with internally or externally to a business is contaminating the different types of ingredients which is not good for the people or the community, such as the ingredients are, starch, paper oil, indictable and other coloring items. And also stone, clay, chalk power and chalk dust, water, mineral oil, all this ingredients are very much harmful to the human body and could affect for the long term harmful.

Metal contamination: When the metallic substances are adding by intentionally or unintentionally for the profit and do more business. These are pesticides from arsenic, mercury from effluent, lead from water, tins from cans. People may expose to the metals from environment. Their accumulation to the human body can lead harmful effects.

Incidental Adulteration: Incidental adulteration refers that when the adulteration occurring for the negligence or careless of the authority, for example when the packaging, then the hazards likes larvae of insects, pesticides residues, droppings, etc. In Bangladesh there are lot of food industry which is not maintain the rules of the government and don't following the issues regarding cleanliness.

03. Methods of Food Adulteration

The culprits are adulterating the foods by different methods, those are discussed below:

Mixing: Mixing is the major methods of food adulteration, they mixing usually, clay, pebbles, stones, sands and marble chips.

Replacement: In the basic food component, the original ingredient is missing partially or fully by the less expensive or cheap ingredient. Their goal is to earn more profit by this illegal way.

Concealing quality: Hiding the original materials or ingredients and the standards in the food, and using the low quality for selling or make more profit.

Addition: In this category, the non-authenticated substances are added to hide the quality ingredient.

04. Foods Prone to Adulteration

The main intention is to adulteration food is to make more money. In general food adulteration and contamination is basically happening for some reasons one is economic income and negligence of the process of correct hygienic, transportation and situation of sales. There are many food companies are not thinking to the public health, they only think for money. The adulteration is not only common in our country but also in developing country as well as, but the developed country's adulteration have the dimension or limit. The journal of food science reported that the most targeted foods that are being adulterated in our country that is, milk, honey, saffron, ghee, cheese, butter, grains, orange juice, coffee, apple juice and many more. All these foods are targeted by the company intentionally and economically.

Milk: Milk is one of the easiest foods to adulteration, that's why the authorities of the agency of testing found this. The report discovered that how cow's milk is being adulterated by use of water, urea, soda, and skimmed milk, and the tissue, and the milk powder. The many harmful disease may occurred such as, food poisoning, heart problems, cancer and stomach disorder. And many deadly affect after block the heart.

Honey: Honey is one of the costly food items that are why the culprits are adulterated. Honey basically adulterated by the use of water and sugar to enhance the quantity. The centre for science and the environment arrange a research steady and found that most of the honey brands selling in state contain a variable amount of antibiotics and different sorts of medicine to looks it pure and authentic to the customer. After using or consumed this honey then many disease could

be such as, causing blood disorders, injury of organs of our body and liver, and respiratory problem for the long run.

Turmeric Powder: Turmeric powder is one of the major spices that are mostly adulterated for the profit with mixing the different types of other unhealthy ingredients like Pesticide residues, sawdust, chalk dust, industrial dyes, metafile yellow dye arsenic, lead metal and many more unhygienic ingredients they are using and mixing with the turmeric powder. After consume this then many sorts of disease could be such as, cancer and stomach disorder.

Ice-Cream: The ice-cream adulteration is very much common in all over the world specially our region this is usual for our ice cream maker company, the ingredients usually use for adulteration is, peppers, ethyl acetate, Emil acetate, nitrate, detergent powder etc. that are poisonous pepper oil is usually mixing a pesticide and ethyl acetate this may cause disease that affect the human body's organs, lungs, kidneys, and hearts. Ice creams basically making to very cold place where the different sorts of bacteria and fat harden belong and they mix with ice cream.

Food Grains and Flour: Rice and wheat is one of the most important food, we people live on specially rice. In rice there are many unhygienic ingredients are mixing such as rice powder, dust, sands, starch, small marvel, stone and many more. With wheat they are mixing different powder, sands and starch and low quality wheat with the high quality wheat, all this mixing are eliminate the basic or regular nutrition of that food, all this are very much harmful to the human body.

Coffee Powder: Due to the high value of commercial, the coffee has been adulteration by many ways. The coffee powder is basically mixed by chicory powder, tamarind seeds, and different unhygienic ingredients. This all mixing can cause the diarrhea, stomach disorder, joint pain, and giddiness. After drink the adulterated coffee the body heart failure may happen, liver and kidney disorder and many more.

Tomato Sauces: In tomato sauce there is no tomato for this, they use the 'pumpkin pulp' and sugar for this food. Basically this is a complementary item for the food business holders. The different sorts of colors to look this exact tomato color. But the main thing is they never use the tomato for this. This unnatural mixed of sauce is highly dangerous to human body.

Tea Leaves: Tea leaves adulterants are generally happens for the reduction of manufacturing cost. Generally tea leaves mixed by chemicals and additives that are added the flavor or aroma. This mixture is actually one kind of adulteration. Many other substances also use for the tea leaves, the usual ingredients is the blue of Prussia, the blue pigment is used for color purpose, varnished and paints. Consumption of adulterated tea may cause many health problems such as, digestion problem, stomach infection and other disease may cause.

Oils and Ghee: Consumption of oil and ghee may adulterated by many ways such as, mustered oil is one of the essential and important oil, this oil is adulterated by argemone seeds used to add

to increase weight and volume. Argemone oil contamination poses a serious threat to the human body, this may check by the appropriate measures. Ghee also being contaminated by the argemone oil, this mixed with it with some other ingredients. Adulterated Oil and ghee is highly threat to our immune system and the heart, heart may bloke by the consumption.

Sweets: Although there is different sweet shop in all over the country, but most of them are made sweet in an unhygienic environment and they use different color and packaging, they are made it by casein and synthetic colors. The sweets are being made in the worst way. They made rasgulla, pantua, kalojam, ledikeni, sandesh, roshmalai in unhealthy place or environment. Formalin is one of the main ingredients they are using. The adulterated milk is being use for making sweets, and another alarming cause is that most of the sweets shop are making sweets besides of the toilet. Consuming adulterated sweets may cause harmful effects such as, digestion problem, cancer, infertility, brain damage, etc.

05. How Foods Are Generally Adulterated:

Food are adulterating by many unhealthy ingredients and many ways, such as:

- Nitrate, boric and other acids are adding to mix with meat and eggs. Cochineal carmine is normally mixed with color.
- Malachite green is usually used with vegetable to looks frees and green, but it may harmful to the body, like carcinogenic.
- Martius yellow is using to enhance the yellow color of food substance. It can be stomach problem.
- Starch is mixing to the paneer, khoya and the condensed milk that might cause disorder of stomach.
- With the ice cream the pepper oil is mixed, which may cause kidney, lung, and heart disease.
- Coffee powder is mixed with tamarind seeds. Chicory powder is using as coloring and increase weight.

The non -authentic and fake substances are strongly forbidden from our authority, also forbidden to the mixing of export items or products. Our food testing authority is regularly tackle this and it is operated by a team which is qualified for the investigation of the food adulteration, they are using the technique of, GCMC, HPTLE, LCMSMS, HPLC and investigation of chemical.

06. Food Adulteration in Bangladesh:

The people of Bangladesh are surviving with the toxic substances which are unsafe and unhealthy by the consumption of adulterated food. Bangladesh has reached to the epidemic level of harmful effect; the researcher said this is the silent killer. In recent times it is very difficult to find a sector which is not adulterant the food. From the vegetable to fruits, from the milk product to daily necessary food items, everything is contaminated by adulteration. Every day we are noticing in news that the new form of adulteration of food. For this people are suffering a lot and premature death, which may increase health costs, disease, and environment pollution. Food is very essential to human body; we all eat food for gain energy and other metabolic nutrition.

Contamination of food with various chemical is dangerous to public health. In Bangladesh the scenario is very common in adulteration, in Bangladesh there is a lack of knowledge of health and the awareness level is very low. For that may cause diarrhea and other threat. The negative effect may cause long term health damage and the different organ of the body. For that liver, kidney failure and also may happen premature death and loss of life for all. In recent times dramatically a huge number of patients are admitting to hospital for the reason of consumption adulterated food.

The common people exactly know the dangers of eating adulterated food and the toxic chemicals, but they are not practicing it by own. The recent studies show that, people are aware and concern but they are still consuming and exporting the adulterated food. The inability of testing the foods and discard mixed foods is the main lacking of the organizations.

The national food safety laboratory revealed a report under the public health institute says: they found that all sort of milk powder, spices like turmeric, edible oil, palm oil, and pepper, and mustard oil, are adulterated. And also hundred percent adulterated found in various types of sweets, in the all over the shop and liquid drinks have almost all found, juices, jellies, jams, puddings and ice creams was below the standard level.

The health inspector of the government and transportable magistrate police collect seven to nine thousands samples each year from various laboratory and other source have found different chemical agents like calcium carbide and ethno genesis are using regularly to ripe veracious sort of fruits like banana, papaya, mango, tomato, and pineapple and also use it to keep the fruits fresh. Government of Bangladesh have planned sated and also law for the limit of formalin purchase and use, and more punishment for those who are not following the rules and law. The law need more guarantees strict law only to increase the regulation of regular trade without any provision for monitoring, quality control, administration, prevention, modification, research, customer learning, etc.

The law and regulations are fixed by the government of Bangladesh, like (BSTI) Bangladesh Standards of Test Institute order in 1985 and 2005 foodstuffs ordinance. The crimes comes into

the rules for poor quality food, fake license, lack of hygiene and poor infrastructure, food adulteration, impurities of food, expired product sales and wrong information to the food packages, etc. Very few times the law enforcement agencies unexpectedly are in active mode but other time they are not active like that and also they are doing this with their mobile courts to penalize sellers or producers of adulterated the food products. In Bangladesh every day there are more than 50 percents food we are taking which is adulterated or contaminated such as, fish, milk, baby food, and this are very much poisonous and this is gradually increasing by the last two years.

The food safety programme in Bangladesh for WHO is also concern about the adulteration rate and they also concern about the public health. The life-long disease may cause for the unsafe and contaminated food and diarrhea to various forms of cancer. WHO estimates that globally around 2.2 million people annually food borne and waterborne diarrhea disease take together kill. Dependable assessment for the public health impact is not measured for the regular monitoring system. Very limited data from the ICDDR, B indicates more than 500 hospitals visited per day for treatment of diarrhea disease. WHO is contributing for the food safety development them trying to the strengthening of government capacity to monitor food safety with recent modern equipment and comprehensive management of risk.

07. Formalin Myth in Bangladesh:

Food adulteration with formalin is the major crime in all over the world. Formalin is one of the usual things to food adulteration, and this is the main concern for the public. Formalin is such a ingredient those are handle this they are also in trouble by health. The most sensitive exposure is the eyes of the people; the eyes, nose, and throat are the main sensitive side to affect first, taking the smell also dangerous for the people's eyes and lungs. There are lots of foods in Bangladesh; people here love to eats and try to fulfill their desire as much as they can eat. The different seasonal food is available there. There have a lot of ethnic foods and different restaurant in all over the country, they making very testy and traditional foods. People of Bangladesh are gradually getting to the poisonous deadly disease to their body, and day by day they feeling unwell for the different foods which they are eating which was applied by formalin, and toxic chemical diet from the open market instead of healthy. This is very bad to the common people of the country. Recent study has found the formalin tension increase as the formalin fishes increasing rapidly, especially this is very alarming for the city of Dhaka. The government and the corporate social responsibility jointly have taken the initiative steps to combindly test the formalin and they tested the (FTC) which stands for formalin testing centre, but there was some leaking of coordination, it does work as it required. So, this is the basic question of how formalin use and how it works, formalin is basically use to 37% to formaldehyde in water, this is actually gas. The formula of formaldehyde HCHO or CH₂O

Uses of formalin, dead animal's body, normally formalin is using for prevent of spoil. Several years fillet, including fruits and vegetables and other perishable food to keep fresh and long time stay, and more widely used for profit increasing. There have a lot of formalin related article published on "International Journal of Consumer Studies", about harmful effect of toxic chemical. The FTC recently published a report on formalin, they found that the formalin is very much available to anywhere in the country and that's why the culprits are using it to the fishes and other food related items, they also found that 48% of the fish have the formalin in Karwan Bazaar and 14% in Saver fish market.

The consumption of formalin mixing food can cause inhalation or ingestion, and also may happen saver pain with inflammation and necrosis and ulceration of the mucous membranes, which line almost connected with every internal organ, this may show the symptoms vomiting blood, diarrhea with bloody stool, blood from the urine, acidosis, vertigo, and circulation failure and the lastly death.

08. The Common Diseases Caused by Food Adulterations:

The (NFSL) National Food Safety Laboratory in the Mohakhali Institute of Public Health recently conducted a survey on security of food in the country. They found almost five hundred of the food types which have been highly adulterated. The consumption of street food is highly dangerous for the common people, such as dysentery, diarrhea, germs, and typhoid fever has been found in street food. The Fuchka and Jhalmuri is one of the worst foods to reason of many diseases. These types of situation are very much threatening for the street food lover. There must need to take necessary steps for overcoming this worst situation. The conducted report found that some of the highly dangerous food ingredients they are using or containing such as, artificial colors, coli forms, mycotoxins, salmonella, and e-coli, all this are very much harmful for the human body and dysentery usually being for the e-coli. On the other hand Salmonella produces typhoid fever into the human body. Germs and diarrhea are being for the coli forms and mycotoxins. The researchers have found in the survey that in every food adulteration, the germs level was extremely higher. People and also children are suffering due to germs in foods, like dysentery, diarrhea, jaundice, typhoid.

Milk: Milk can be adulterated by using, milk powder, starch, urea, acid, sugar and soap chemical. Most of the chemicals are used by poisonous chemicals.

Health effects: malfunctioning of organs, heart related issues and cancer.

Butter: The Ghee is usually adulterated by cheaper oils and then trying it to selling by telling it's an original Ghee. Agronomies oil is usually using to adulterate in butter and ghee, this is very much toxic for human body. The normal and authentic ghee and the fake adulterated ghee is not look like same. Oleomargarine and butter added to butter.

Health effects: cancer and acute renal failure. It can paralyze the human body.

Sugar and Salt: Sugar and salt is basically adulterated by gypsum powder and white sand.

Health effect: Kidney stone, stomach disorder.

Tea Powder: Tea leaves are used for adulterated with, artificial color or dye, and iron filling is used to adulteration.

Health effect: Cancer and tetanus.

Chili powder: Chili powder adulterants by, red brick powder, grit, sand, dirt, non permitted colors, saw dust, Sudan red, and also use papaya seeds to obtain the required color.

Health effect: Digestion problem, stomach disorder, and carcinogenic.

Sweets: Sweets are adulterated by different colors which is not permitted to use, turmeric powder, sweetmeats, metafile yellow is using for bright color of pulses.

Health effect: Cancer and tumor.

Mustard Seeds and Oil: Mustard seed and oil is adulterated by argemone oil, and argemone seeds, and different types of chemicals.

Health effect: Epidemic dropsy and heart disease.

Honey: Honey usually adulterated by sugar, syrup and corn syrup, jiggery, acids or enzymes from corn.

Health effect: Diabetics, obesity, eyes damaging, and respiratory problem.

Bakery Items: Baked food adulteration can have tremendous health effect, and threatening too, the bakery food normally adulterated by cream, cereals and the creamy sauces which increase salivation, abdominal cramps, vomiting, and prostration. Improperly processed foods may cause food poisoning and pain of the whole body and abdominal pain also, and other sort of body damage may cause.

09. Effects of Food Adulteration on Community Health

Food adulteration is usually done by different way, one of the major ingredients is chemical and formalin, this chemical and formalin is mixing with the vegetable and fruits. This adulteration is used to keep the foods fresh and conserve, this food is damaging the physical human body fitness and also reason of different disease, like cancer, skin disease, and asthma. Food borne disease is being for the meat, and non-hygienic meat products, usually fever and chills. The effect of consuming the adulterated food is highly harmful for health. In water packaging process the cobalt is using, cobalt is highly dangerous for health. The use of tamarind powder and seed dates, with coffee powder for adulteration, this can cause diarrhea.

10. Other Types of Food Adulteration

Turmeric: Turmeric powder is adulterated by other species of curcuma, and lead chromate is mixing for the natural color of it. This is highly harmful for the human body; it may cause abortion, paralysis, brain injury, and anemia.

Fruits: Fruits are basically an essential food for the human body and it also adulterated by many ways, one of the ways is arsenic spray, this cause paralysis, cramps, death, chills, dizziness.

Powdered sugar is adulterated often by washing soda and intestinal disorder may cause for other food. And many food items are processing into the unhygienic condition or place that may cause food poison and other malfunction related problem. Coffee is also adulterated by many byproducts such as, coffee husks and sticks. The coffee grounds and brown sugar and grains like barley is mixing to the coffee, but it may cause indigestion and heart related problem.

11. Food Adulteration by Packaging

Food packaging is very much important for the food maker, if any news found fake into the package that would be bad reputation, despite of that issue, the manufacturers are packaging lowers the quality of foods and as they add of extraneous materials that is not good, and also extracting of essential ingredients. Some of the fraud usually they are doing:

- Expired date is changing by the manufactured date by food adulteration.
- The illegal use of known and unknown certified trademark or testing name as looks authentic and pure.
- The weight is written wrong or fraud by the package, which is lower than written.
- Repackaging the damaged foods, this may stock and returned from buyer.
- Changes the country and its origin, to looks it authentic food product.

12. Health Hazards by Food Adulteration

The effect of food adulteration is very dangerous and harmful for health it can be short term or immediate and long term for the body.

Immediate effects:

The immediate cause can be headache, asthma, runny nose, urticaria and many other common reactions. Gastric intestinal problems be like, infections, diarrhea and abdominal pain. Bleeding also happened and another are, hyperactivity, contact dermatitis, and other skin related problems. Toxicity for toxic sweeteners, additives, and colors etc. argemone oil consumption mixed with mustard oil cause epidemic dropsy.

Long term effects:

Long term effect refers that where the damage or effect is being for the long run to the human body, it may damage organs, defect of birth, cancer and liver damage. Break the teeth and adverse effect in the digestive line or tract in human body. And also the various damages of human body, skin, lungs and eyes, Anemia, cardiac arrest and stomach.

13. Prevention of Food Adulteration

Food adulteration is the major problem in all over the world; this is tough to find good or safely foods. The Government is fully committed to implement the policy of zero tolerance. The Bangladesh Standard and Testing Institution (BSTI) and the district administration jointly conduct mobile courts for solving this adulteration problem. Most of the country is worried about this deadly adulteration, and this is high risk for all those are consuming adulterated foods. Almost all types of food is adulterated, life saving medicines also. (NFSL) conducted a survey and they found around 500 food identified or found adulterated. The government of the Bangladesh food and drugs was established in 1906 into United States, and it's operated in India in the year of 2011. On that time law enforcement agency did a strong correctness for discovering the cases of adulteration. 10 mobile courts daily drive through (BSTI) regional and divisional level. Recently the high court giving an order to ban that 52 food item that failed to provide the standard of quality. Dhaka Metropolitan Police launched an anti formalin campaign in the mid 2014, for checking the formalin in the Dhaka city to test the seasonal fruits like, mango and lychee. BSTI jointly worked with mobile court irregularly to solve this issues and shaped mobile court. They also found there are 30 types of chemicals are being used into the fruits and other adulteration, this should need to monitor regularly. One thing is very clear that out state is not monitoring this and the poor legal control of adulteration. This practice is gradually increasing for the weakness of law enforcement, and spreading these poisons rapidly. Lead is using for cheese color. The renowned testing site (IPH) also found the many food item is compromising the standard quality to their food such as, soya bin oil, mustard oil, noodles, ghee, seeds and other daily essential food items. Edible oil is not meeting the standard level. The 55 noodles shop were collected samples for protein testing but only 14 items is not following the standard level.

14. Findings:

Food adulteration being much more in hotels and restaurants mixing the rotten and stale food, with the fresh and clean food then it serves to the customers. The food adulterated businessman is not only ignoring human rights for safety food but also endangering public health into a serious chronic disease. Fruits and vegetables are also being adulterated by harmful chemicals, Junk food also adulterated by chemical and other harmful ingredients. Eventually all sort of foods are adulterated by mixing other ingredients by the greedy businessman. Fish is one of the major items for adulterated by formalin and other unhealthy ingredients like preservatives to looks fresh. Bakery and confectionary foods are also adulterated by mixing toxic chemical and other substances. Food adulteration means adding or subtraction some ingredients. In this whole process of adulteration there are two things would happen either lowering the nutritive value or

remove the essential ingredient or adding inferior quality, it may happen or done by intentionally or unintentionally. This all are illegal thing, and a crime, there must be punished if anybody found this guilty or offence. The following topics are the reason behind the food adulteration:

- For earning more profits.
- For increase the weight by adulterated value.
- To increase volume of food by showing the lower price.
- To make product cheaper price.
- Shortage of authentic ingredients at reasonable price.
- Insufficient knowledge about the food safety risks.

15. Suggestions and Recommendations:

Food adulteration is a major concern in all over the world, but some of the nation is doing is highly and we are one of them. As this has become the national issue. First of all there is no major initiative to control this food adulteration in our country. More importantly our government have taken some authoritative action against for food adulteration and also fined some business traders, but there is no improvement of visibility, whenever the authority takes action and apply the rules then it is ok, after that when the action have finished then the businessman again start their business of food adulteration. Therefore, the authority must perform regularly to minimize this food adulteration. Then, the step should have to take for the dishonest entrepreneurs and also need to take strict measures to abandon this illegal activity, and also need to set an exemplary punishment for the people who are walk on food adulteration. If the necessary step not taken then the situation or this kind of crime would be impossible to control. The new law can be played to these issues.

- The strategies of law enforcement agency should be clear for compliance, that's why the non-compliances can be identified easily and authority can apply the rules very quickly.
- Each court of food must have the power to hear and solve the issues related of food.
- Well-equipped laboratories is highly need for each type of food study and research in all over the country on district based, for testing of formalin, DDT, preservatives, carbide, and color control test by the qualified and personal cadres.
- The food safety act in 2013 and the law of formalities management should apply for operation as quick as possible.

- The clean food ordinance must be considered as the main food business as in substance. And there must be coordination with the BSTI which will be given a food standard certificate.
- The authority of food inspection must take responsibility and transparency and also be followed in the study and processing system. The confirmation of punishment should be effective for culprits.
- This is our responsibility to save ourselves and also our next generation, by doing this, we must work and fight together to stop the ugly tendencies of adulteration. The authority or management must act together with the businessman to solve this problem of adulteration.
- The initiative steps must be taken to correctly understand the adulteration problem.
- We responsible citizens should inform the other general people about the harmful health effect of consumption of adulterated food. If all we do this correctly then the scenario of the society will be changed, this is one of our taking power to taking care of our safety food.
- Every business operator must feel the ethical and moral responsibility, to deliver and serve a health food to the consumer, and definitely thought about the people's health.
- The epidemic disease and the epidemic related update must be taken seriously as the world is going fast.
- The assessment of risk must be taken for all ingredients, processing aids, additives and the techniques of processing.
- The authentic testing procedures and rapid testing procedure should ensure for different tests and scanning, as ingredients, additives aids for positive approval in order to increase the sample.
- There must be laboratories in different locations for testing.
- Measure should need to be taken to understand the difference between natural thing and unnatural things of texture.
- We common people can avoid some foods like, we can avoid market juice instead of we can make it all ourselves.
- The Government should confirm or ensure the certification of food packages from the industrial products.
- The date of expiry is most important issue, we should buy product by checking the date.

16. Conclusion

The food adulteration in Bangladesh has reached into the threatening situation, the food chemicals and toxic substances level is in alarming situation. In hotels and restaurant also being or serving adulterated food usually this is the main source of the risk of health. In Bangladesh the food adulteration is always a bargaining issue, instead of the government has been taking many steps to this problem but failed. The food adulterated by, fish is keeping fresh by formalin, color of fabric in sweets and backed food also following this activity. The culprits should understand this various risks and threats which is damaging public health, specially the children's are the most vulnerable for food adulteration. The responsibility is for the aware people is that, to aware the other people those don't have the sufficient knowledge of food adulteration. Another important issue is that we most common people don't know properly, how to keep or store the food for this reason the disease may happen like, food poisoning, diarrhea and cholera. The law must be guaranteed that the highest penalty is given for the food adulteration for the culprit. The new rules have been passed but still not implement fully, and the other thing is, there is no food court in our district. Right now the authority of management and government need to take urgent step to save the general people from this high deadly risk. The national power of a country should come to address these issues and need to solve as soon as possible.

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