

FOOD ADULTERATION AND IT'S HEALTH HAZARDS

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ABSTRACT :

Food is substance consumed other than water and drugs for maintaining the health, wellbeing and vitality of the individual . The selection of foods best suited fo promoting good health has been found out of by trial and error by continued use. Man has exhibited much though and foresight in cultivating variety of grains, fruits, vegetables, nuts and oilseeds for use as food for human being. Adulteration of food is old problem. It consists of a large number of practices e.g mixing, substitution concealing the quality, putting up decomposed foods for sale, misbranding or giving false labels' and addition of consumers: First he is playing more money for lower quality, Secondly some forms adulteration are injurious to health even resulting in death.¹ Food adulteration practice vary from on part of country to another and from time to time our. Knowledge about the current practices of food is by no means complete. Adulterants used are, in fact, poisons in one way or other. Regular use of these substances will lead hazards health defects.

Key words: Food substances, adulteration, health hazard

INTRODUCTION:

Health is wealth. Food is basic necessity of life. People need to be cautious to keep their health well. Food is substance consumed other than water and drugs for maintaining the health, wellbeing and vitality of the individual. The selection of foods best food suited for promoting good health.

It should be pure, nutritious and free from any type of adulteration for proper maintenance of human health. We also have to maintain the standard of food. Adulteration consist of large number of practices such as mixing, substitution, removal, concealing the quality, selling decomposed products, misbranding ,addition of toxicants etc.

Food adulteration is social evil. This is done by the traders because of their greed for money. The food adulteration disadvantages for the consumers are: (i) he is paying more money for food stuff of lower quality (ii) he is at risk of health hazard². Adulteration thrives in India with a view of 'Sab Kuchh Chalta Hai'.

This year report of adulteration by Health and Family Welfare minister Shri JP Nadda.

Around 18% of the food sample tested for violation of food safety standards in past three years were found to be adulterated. To identify and prevent health hazards of this kind of adulterants in food stuffs Government has introduced The Prevention and Food Adulteration Act 1954. And also several agencies have been set up by the government of India to remove adulterants. For example Agmark and Food safety and standards authority of India, etc.

OBJECTIVE:

- To Identify and detection of common adulteration in food stuffs.
- To create awareness in the public about its toxicity, which leads to health hazards. Preventive measures

Definition:³

- Adulteration is defined as the process by which the quality or the nature of a given substance is reduced by
- The addition of foreign or an inferior substance,
- The removal of a vital elements,
- Mixing ,substitution, concealing the quality, misbranding and given false labels are different from adulteration

TYPES OF ADULTERANTS:³

1) INTENTIONAL : Sand, marble chips, stone, chalk powder, water to milk, harmful color & mineral oil to edible oils

2) INCIDENTAL : Pesticide residues, dropping of lizards, rodents, larva in food.

3) METALIC CONTAMINATION: Arsenic from pesticides, lead from water ,mercury in industries etc

REASONS FOR ADULTERATION

ARE :

- ▶ To get more profit.
- ▶ To increase weight, adulterant is added. To increase volume of trade by showing lower prices.

Table Shows Common Adulterants and Health Hazards⁴

SL NO	FOOD STUFFS	ADULTRANTS	HEALTH HAZARDS
1.	Bengal Gram dal, Thoor Dal	Kesar dal.	Lathyrism, Cancer.
2.	Tea	Used tea leaves processed and colored	Liver Disorder
3.	Coffee Powder	Tamarind seed ,date seed powder	Diarrhoea
		Chicory powder	Stomach disorders, Giddeness and joint pain
4	Fish	Formaldehyde	Carcinogenic
5	Sugar	Chalk Powder	Stomach disorder
6	Wheat and other food grains	Ergot(a fungus containing poisonous substance)	Poisonous
		Sand, marble chips, stones, filth	Damage to digestive tract
7	Turmeric Powder	Yellow aniline dyes	Carcinogenic
		Non-permitted colorants like metanil yellow	Highly Carcinogenic
		Tapioca starch	Stomach disorder
8	Chili powder	Brick powder, saw dust	Stomach disorder
		Artificial colors	Cancer
9	Water and Liquors	Cobalt	Cardiac insufficiency and myocardial failure
10	Asafoetida (HINGU	Foreign resins galbanum, colophony resin	Dysentery
11	Jaggery	Washing soda, chalk powder	Vomiting ,Diarrhea
12	Sweet ,Juice, Jam	Non- permitted coal tar dye, metanil yellow	Carcinogenic
13	Fruit Juice, soft drinks etc. in contact with cadmium	Cadmium	Increase salivation, acute gastritis, liver and

	plated vessals.cadmium contaminated water and shell fish		kidney damage,prostrat cancer
14	Mustard	Argemone seeds	Epidemic dropsy
15	Alcoholic liquor	Methanol	Blurred vision, blindness, death
16	Black pepper	Papaya seeds	Stomach ,Liver problem
17	Milk	Unhygienic water/starch	Stomach disorder

Test for Detection of Food

Adulterants: PHYSICAL TEST⁵

- Argemone seed are black in colour but are not uniformly smooth and round.
- Kesari dal is wedge shaped.
- Iron filling in tea can be separated by using magnet.
- Ergot seed are lighter than Bajra and float on water.
- Sand ,gravel, pebble can be observed and removed physically

Simple laboratory chemical test:

1. Metanil Yellow in haldi powder to 2gm of sample add 5ml of alcohol. Shake and add a few drops of concentrated HCL. A Pink coloration presence of metanil yellow.

2 .Addition of starch: To milk and butter: Add a few drops of iodine solution to a small quantity of the sample. Formation of blue color.

3. Coffee powder: Decolorize it by adding KMNO₄ Solution. Then add drops of iodine solution. Formation of blue color

III. Argemone oil in mustard oil: Heat 5ml of test sample with 5ml nitric acid for 2to 3 minutes. A red colour will appear if argemone oil is present.

IV. Artificial red color to chillies: A piece of cotton, soaked in liquid paraffin, is rubbed with a sample of chillies powder. Cotton becomes red with artificial color.

Criteria for selection of food

- Selection of wholesome and non adulterant food is essential for daily life to make sure that such foods do not cause any health hazards.
- Although is it not possible to ensure wholesome food only on visual examination when the toxic

contaminants are present in ppm/ ppb level.

However, visual examination of the food before purchase make sure to ensure absence of insects , visual fungus , foreign matters, etc. Therefore due care taken by the consumer at the of purchase of food after thoroughly examining can be of great helpful.

- Secondly, label declaration on the packed food is very important for knowing the ingredient and nutritional value. It also help in checking the freshness of the food and the period of best before use.

Preventive Measure⁶ : It is having two catagar

1) Food Standards Legal Measures

1) Food Standards:

A) Codex Alimentarius: Codex Alimentarius Commission (CAC) is a principal organ of the joint FAO/WHO Food Standards Program. This has formulated food standards for international market. The food standards in India based on CODEX alimentarius

B) PFA Standards: It's laid down under the PFA Act (1954) By the Central committee of Food standards. the standards have been established

which are revised time to time and to obtain a minimum level quality of foodstuffs attainable under Indian condition.

C) AGMARK STANDERS: These standards are set by the Directorate of Marketing and Inspection of the Govt. Of India. It gives the consumers an assurance of quality in accordance with the standards laid down.

D) BUREAU OF INDIAN STANDARDS: The ISI mark on any article of food is a guarantee of good quality accordance with the standards of BIS.

2) LEGAL MEASURES: Prevention of Food Adulteration act 1954(PFA-ACT): with objective of,

- Ensuring pure and wholesome quality of food to the consumers,
- To protect their health from the fraudulent practices of traders and to encourage fair
- Act provides protection against adulteration the food that may have deleterious effects on consumer's health.
- It also regulates the use of chemicals, pesticides, flavors and additives in food preparation.

DISCUSSION:

Health is depends on food and helps in sustenance of the life. Now days increase the impurity of food & having lack of nutritional value may effects on human being leads to acute or chronic health hazards. Adulteration in food is normally present in its most crude form, prohibited substance are either added or partly or substituted. Reasons for adulteration of food are, to gain money, get more profit, and to increase of trade by showing lower price. This is ultimately results that the consumer is either cheated or often become victim of diseases. Such type of adulteration is quite common in developing countries or backward countries. However, adequate precautions taken by the consumer at the time of purchase of such produce can make him alert to avoid procurement of such food .It is equally important for the consumers to know the common adulteration and their effect on health.

CONCLUSION:

By the study of food adulteration found that widely use of adulterants which can cause serious health hazards. Food adulteration has become the order of the day and

consumer education and awareness is need of the hour. Need of checking ISI and AGMARK of food items. Need of strict enforcement of food law. Further studies can be done to find easy and quick methods to identify adulteration and find its effect on body

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